NASA

Office of Public Affairs

Satellite Situation Report

VOLUME 17 NUMBER 2 APRIL 30, 1977

Goddard Space Flight Center
Greenbelt, Maryland

OFFICE OF PUBLIC AFFAIRS
GODDARD SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

VOLUME 17 NO. 2 APRIL 30, 1977

SATELLITE SITUATION REPORT

THIS REPORT IS PUBLISHED AND DISTRIBUTED BY THE OFFICE OF PUBLIC AFFAIRS, GSFC.

THE REPORT IS COMPILED BY THE GSFC OPERATIONS CENTER BRANCH AS OF 2400Z ON APRIL 30, 1977.

THE REPORT CONSISTS OF DATA COMPUTED BY THE GODDARD SPACE FLIGHT CENTER, NORAD, AND THE SMITHSONIAN ASTROPHYSICAL OBSERVATORY.

TRANSMITTING FREQUENCIES ARE SHOWN ONLY FOR SATELLITES BEING MONITORED BY THE NASA SPACEFLIGHT TRACKING AND DATA NETWORK.

SPACE OBJECTS BOX SCORE

	OBJECTS IN ORBIT	DECAYED OBJECTS
AUSTRALIA	1	1
CANADA	8	0
ESA	2	0
ESRO	1	9
FRANCE	54	25
FRANCE/FRG	2	0
FRG	9	3
INDIA	1	0
INDONESIA	2	0
INTERNATIONAL TELECOM-MUNICATIONS SATELLITE ORGANIZATION (ITSO)	21	0
ITALY	0	4
JAPAN	22	0
NATO	4	0
NETHERLANDS	1	3
PRC	6	14
SPAIN	1	0
UK	11	4
US	2758	1462
USSR	1337	4176
TOTAL	4241	5701

OBJECTS IN ORBIT

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ. (MHZ)	NOTES
1958 LAUNCHES										
BETA 1		16	US	17 MAR	138.2	34.2	4301	654		
BETA 2	VANGUARD 1	5	US	17 MAR	133.8	34.2	3923	649		
BETA 3		1576	US	17 MAR	131.3	34.2	3722	640		
1959 LAUNCHES										
ALPHA 1	VANGUARD 2	11	US	17 FEB	124.8	32.8	3233	555		
ALPHA 2		12	US	17 FEB	129.0	32.9	3605	556		
ALPHA 3		5807	US	17 FEB	127.0	32.8	3423	558		
ETA 1	VANGUARD 3	20	US	18 SEP	129.0	33.3	3645	510		
IOTA 1	EXPLORER 7	22	US	13 OCT	100.6	50.3	1032	548		
IOTA 2		23	US	13 OCT	99.7	50.3	956	540		
MU 1	LUNIK 1	112	USSR	2 JAN	HELIOCENTRIC ORBIT					
NU 1	PIONEER 4	113	US	3 MAR	HELIOCENTRIC ORBIT					
1960 LAUNCHES										
ALPHA 1	PIONEER 5	27	US	11 MAR	HELIOCENTRIC ORBIT					
BETA 1		28	US	1 APR	98.6	48.3	713	673		
BETA 2	TIROS 1	29	US	1 APR	99.0	48.3	735	688		
BETA 3		101	US	1 APR	97.1	48.5	652	588		
BETA 4		115	US	1 APR	99.6	48.1	792	690		
GAMMA 4		99	US	13 APR	94.3	51.3	550	423		
ETA 1	TRANSIT 2A	45	US	22 JUN	101.4	66.6	1045	611		
ETA 2	GREB	46	US	22 JUN	101.3	66.6	1033	610		
ETA 3		47	US	22 JUN	101.1	66.6	1023	609		
ETA 4		840	US	22 JUN	101.0	66.6	1008	606		
ETA 5		841	US	22 JUN	100.9	66.6	1003	606		
IOTA 2		50	US	12 AUG	118.0	47.2	1683	1502		
IOTA 3		51	US	12 AUG	118.2	47.2	1684	1518		
IOTA 4		52	US	12 AUG	CURRENT ELEMENTS NOT MAINTAINED					
IOTA 5		53	US	12 AUG	118.4	47.2	1686	1533		
NU 1	COURIER 1B	58	US	4 OCT	107.0	28.3	1210	962		
NU 2		59	US	4 OCT	106.5	28.2	1207	921		
XI 1	EXPLORER 8	60	US	3 NOV	110.0	49.9	2044	414		
XI 2		62	US	3 NOV	106.8	49.9	1754	408		
PI 1	TIROS 2	63	US	23 NOV	97.9	48.5	710	609		
PI 2		64	US	23 NOV	97.0	48.5	659	579		
PI 3		74	US	23 NOV	97.5	48.5	683	597		
PI 4		75	US	23 NOV	97.7	48.5	696	602		
PI 5		5922	US	23 NOV	105.3	47.0	1038	977		
1961 LAUNCHES										
GAMMA 1	VENUS PROBE	80	USSR	12 FEB	HELIOCENTRIC ORBIT					
DELTA 2		82	US	16 FEB	118.3	38.8	2579	634		
DELTA 3		85	US	16 FEB	116.8	38.8	2430	644		
DELTA 5		3738	US	16 FEB	116.5	38.8	2422	623		
DELTA 6		3927	US	16 FEB	116.5	38.8	2410	637		
DELTA 7		4026	US	16 FEB	115.8	38.8	2383	599		
NU 1	EXPLORER 11	107	US	27 APR	107.1	28.7	1703	483		
NU 2		3739	US	27 APR	104.7	28.8	1488	475		
OMICRON 1	TRANSIT 4A	116	US	29 JUN	103.7	66.8	999	875		
OMICRON 2	INJUN-SR-3	117	US	29 JUN	103.7	66.8	1000	876		
OMICRON 3 - 254			US	29 JUN	SEE NOTE 1*					1*
RHO 1	TIROS 3	162	US	12 JUL	100.3	47.9	809	736		
RHO 2		165	US	12 JUL	100.0	47.8	792	726		
RHO 3		166	US	12 JUL	98.3	47.9	759	598		
RHO 4		167	US	12 JUL	101.8	47.8	926	769		
SIGMA 1	MIDAS 3	163	US	12 JUL	161.4	91.1	3545	3345		
SIGMA 3		188	US	12 JUL	161.1	91.1	3541	3321		
SIGMA 4		196	US	12 JUL	161.8	91.1	3583	3340		
A DELTA 1	MIDAS 4	192	US	21 OCT	165.9	95.8	3756	3496		
A DELTA 3		194	US	21 OCT	165.5	95.8	3776	3444		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1961 LAUNCHES (CONT'D)										
A DELTA 4		195	US	21 OCT	156.3	95.8	3845	3440		
A DELTA 5		2009	US	21 OCT	165.7	95.8	3732	3500		
A DELTA 6		2371	US	21 OCT	165.5	95.8	4329	2892		
A ETA 1	TRANSIT 4B	202	US	15 NOV	105.7	32.4	1104	951		
A ETA 2	TRAAC	205	US	15 NOV	105.7	32.4	1105	953		
A ETA 3		204	US	15 NOV	105.6	32.4	1097	946		
1962 LAUNCHES										
ALPHA 1	RANGER 3	221	US	26 JAN	HELIOCENTRIC ORBIT					
ALPHA 2		222	US	26 JAN	HELIOCENTRIC ORBIT					
BETA 1	TIROS 4	226	US	8 FEB	100.2	48.2	836	706		
BETA 2		227	US	8 FEB	101.2	48.1	932	697		
BETA 3		228	US	8 FEB	99.2	48.4	748	693		
BETA 4		229	US	8 FEB	99.9	48.3	814	695		
ZETA 1	OSO 1	255	US	7 MAR	95.1	32.8	535	508		
KAPPA 1		271	US	9 APR	152.9	86.6	3410	2785		
KAPPA 3		273	US	9 APR	152.6	86.6	3389	2775		
KAPPA 4		274	US	9 APR	153.3	86.6	3430	2794		
KAPPA 5		4494	US	9 APR	152.8	86.6	3397	2785		
MU 2		282	US	23 APR	HELIOCENTRIC ORBIT					
A ALPHA 1	TIROS 5	309	US	19 JUN	100.2	58.0	956	586		
A ALPHA 2		311	US	19 JUN	99.6	58.0	904	576		
A ALPHA 3		312	US	19 JUN	101.4	58.2	1057	593		
A ALPHA 4		313	US	19 JUN	98.4	57.9	814	560		
A EPSILON 1	TELSTAR 1	340	US	10 JUL	157.7	44.7	5637	949		
A EPSILON 2		341	US	10 JUL	157.6	44.7	5624	948		
A OMICRON 1		369	US	23 AUG	99.3	98.3	840	613		
A OMICRON 2		370	US	23 AUG	96.5	98.5	640	550		
A OMICRON 3		378	US	23 AUG	100.1	98.4	924	611		
A OMICRON 4		388	US	23 AUG	99.0	98.5	822	607		
A RHO 1	MARINER 2	374	US	27 AUG	HELIOCENTRIC ORBIT					
A RHO 2		375	US	27 AUG	HELIOCENTRIC ORBIT					
A PSI 1	TIROS 6	397	US	18 SEP	98.5	58.3	693	685		
A PSI 2		398	US	18 SEP	97.9	58.2	667	650		
A PSI 3		399	US	18 SEP	99.0	58.4	755	675		
A PSI 4		400	US	18 SEP	97.4	58.1	660	610		
B ALPHA 1	ALOUETTE 1	424	CANADA	29 SEP	105.4	80.4	1033	997		
B ALPHA 2		426	US	29 SEP	105.3	80.4	1027	1000		
B ALPHA 3		510	US	29 SEP	105.3	80.5	1023	998		
B ALPHA 4		511	US	29 SEP	105.4	80.4	1040	991		
B GAMMA 1	EXPLORER 14	432	US	2 OCT	CURRENT ELEMENTS NOT MAINTAINED					
B GAMMA 2		NNA	US	2 OCT	CURRENT ELEMENTS NOT MAINTAINED					
B ETA 1	RANGER 5	439	US	18 OCT	HELIOCENTRIC ORBIT					
B ETA 2		440	US	18 OCT	HELIOCENTRIC ORBIT					
B LAMBDA 1	EXPLORER 15	445	US	27 OCT	CURRENT ELEMENTS NOT MAINTAINED					
B LAMBDA 2		NNA	US	27 OCT	CURRENT ELEMENTS NOT MAINTAINED					
B MU 1	ANNA 1B	446	US	31 OCT	107.8	50.1	1182	1075		
B MU 2		447	US	31 OCT	107.6	50.1	1166	1065		
B NU 3		450	USSR	1 NOV	HELIOCENTRIC ORBIT					
B UPSILON 1	RELAY 1	503	US	13 DEC	185.0	47.5	7438	1319		
B UPSILON 2		515	US	13 DEC	184.8	47.5	7421	1319		
B CHI 1	EXPLORER 16	506	US	16 DEC	104.3	52.0	1175	748		
B PSI 1	TRANSIT 5A	509	US	19 DEC	98.3	90.6	696	669		
B PSI 3		519	US	19 DEC	98.4	90.6	700	671		
B PSI 4		523	US	19 DEC	98.7	90.4	752	649		
B PSI 5		7258	US	19 DEC	94.7	90.6	512	503		
1963 LAUNCHES										
1963 004A	SYNCOM 1	553	US	14 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1963 004B		532	US	14 FEB	317.3	32.7	17827	236		
1963 005A		534	US	19 FEB	96.7	100.4	717	486		
1963 005B		533	US	19 FEB	95.5	100.4	628	461		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1963 LAUNCHES (CONT'D)										
1963 005D		536	US	19 FEB	94.0	100.4	515	428		
1963 008B		566	USSR	2 APR	BARYCENTRIC ORBIT					
1963 013A	TELSTAR 2	573	US	7 MAY	225.2	42.7	10810	961		
1963 013B		575	US	7 MAY	225.0	42.7	10799	953		
1963 014A		574	US	9 MAY	166.4	87.3	3675	3615		
1963 014B		579	US	9 MAY	156.2	87.4	4037	3241		
1963 014C		608	US	9 MAY	166.4	87.3	3717	3572		
1963 014D	- 014DE		US	9 MAY	SEE NOTE 2*					2*
1963 022A		594	US	16 JUN	99.1	89.9	734	704		
1963 022B		603	US	16 JUN	99.2	89.9	741	711		
1963 022C		610	US	16 JUN	100.6	90.1	853	723		
1963 024A	TIROS 7	604	US	19 JUN	97.0	58.2	630	604		
1963 024B		605	US	19 JUN	94.6	58.1	514	492		
1963 024C		606	US	19 JUN	97.2	58.3	642	610		
1963 024D		607	US	19 JUN	95.3	58.0	556	512		
1963 025B		614	US	27 JUN	127.1	82.1	3660	338		
1963 026A	RESEARCH SATELLITE FOR GEOPHYSICS	612	US	28 JUN	99.5	49.7	1065	405		
1963 030A		622	US	18 JUL	167.8	88.4	3725	3679		
1963 030B		635	US	18 JUL	167.8	88.4	3726	3678		
1963 030C		630	US	18 JUL	167.4	88.3	3787	3587		
1963 030E		631	US	18 JUL	158.2	88.4	3771	3667		
1963 030F		3121	US	18 JUL	166.6	87.3	3712	3595		
1963 030G		3132	US	18 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1963 031A	SYNCOM 2	634	US	26 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1963 031B		625	US	26 JUL	171.8	32.7	7439	281		
1963 038A		669	US	28 SEP	107.0	89.8	1113	1071		
1963 038B		670	US	28 SEP	107.3	89.8	1133	1074		
1963 038C	SN 39	671	US	28 SEP	107.2	89.8	1132	1073		
1963 038D		672	US	28 SEP	107.0	89.8	1116	1066		
1963 038E		745	US	28 SEP	106.9	89.8	1106	1067		
1963 038F		2097	US	28 SEP	107.0	89.8	1122	1062		
1963 038G		3166	US	28 SEP	107.3	89.8	1133	1073		
1963 038H		7259	US	28 SEP	106.8	89.8	1109	1051		
1963 039A		674	US	17 OCT	CURRENT ELEMENTS NOT MAINTAINED					
1963 039B		675	US	17 OCT	CURRENT ELEMENTS NOT MAINTAINED					
1963 039C		692	US	17 OCT	CURRENT ELEMENTS NOT MAINTAINED					
1963 043A	POLYOT 1	683	USSR	1 NOV	98.6	58.8	1053	334		
1963 047A	CENTAUR 2	694	US	27 NOV	106.9	30.3	1698	472		
1963 047B	- 047P		US	27 NOV	SEE NOTE 3*					3*
1963 049A		703	US	5 DEC	106.7	89.8	1089	1068		
1963 049B		704	US	5 DEC	107.0	89.8	1121	1065		
1963 049C		705	US	5 DEC	107.0	89.8	1118	1066		
1963 049D		706	US	5 DEC	106.9	89.8	1108	1063		
1963 049E		715	US	5 DEC	106.7	89.8	1102	1055		
1963 049F		753	US	5 DEC	106.9	89.8	1114	1063		
1963 049G		2432	US	5 DEC	107.0	89.8	1119	1065		
1963 049H		2620	US	5 DEC	106.6	89.8	1084	1064		
1963 049J		2930	US	5 DEC	103.8	89.8	1031	848		
1963 049K		4586	US	5 DEC	103.4	89.7	1060	786		
1963 049L		6182	US	5 DEC	103.5	89.7	1071	784		
1963 049M		6283	US	5 DEC	103.5	89.7	1062	792		
1963 053A	EXPLORER 19	714	US	19 DEC	110.6	78.8	1665	852		
1963 053B		721	US	19 DEC	115.6	78.6	2368	604		
1963 053C		722	US	19 DEC	114.6	78.7	2165	712		
1963 053D		723	US	19 DEC	114.4	78.7	2143	718		
1963 053E		724	US	19 DEC	114.4	78.7	2179	686		
1963 053G		726	US	19 DEC	113.8	78.6	2141	664		
1963 053H		732	US	19 DEC	114.4	78.7	2168	691		
1963 053J		3750	US	19 DEC	114.1	78.7	2158	679		
1963 054A	TIROS 8	716	US	21 DEC	99.2	58.4	748	693		
1963 054B		717	US	21 DEC	98.7	58.4	723	676		
1963 054C		720	US	21 DEC	100.8	58.4	905	696		
1963 054D		736	US	21 DEC	96.7	58.5	646	555		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1964 LAUNCHES										
1964 001A		727	US	11 JAN	103.4	69.9	931	911		
1964 001B	GRAVITY GRADIENT 1	728	US	11 JAN	103.3	69.9	929	909		
1964 001C	EGRS 1	729	US	11 JAN	103.4	69.8	930	910		
1964 001D	SOLAR RAD.	730	US	11 JAN	103.4	69.9	930	910		
1964 001E		731	US	11 JAN	103.4	69.9	931	910		
1964 002A		733	US	19 JAN	101.1	99.0	844	787		
1964 002B		734	US	19 JAN	101.1	99.0	828	805		
1964 002C		735	US	19 JAN	101.2	99.0	831	805		
1964 003A	RELAY 2	737	US	21 JAN	194.7	46.3	7467	2031		
1964 003B		738	US	21 JAN	194.7	46.3	7475	2028		
1964 004B		741	US	25 JAN	108.8	81.4	1308	1044		
1964 004C		742	US	25 JAN	108.7	81.4	1305	1039		
1964 004D		743	US	25 JAN	108.7	81.5	1306	1037		
1964 006A	ELEKTRON 1	746	USSR	30 JAN	157.4	60.8	6973	401		
1964 006B	ELEKTRON 2	748	USSR	30 JAN	1356.3	64.3	66034	2387		
1964 006C		750	USSR	30 JAN	160.3	60.8	6397	402		
1964 006D		751	USSR	30 JAN	1383.9	63.3	67386	2133		
1964 016D	ZOND 1	785	USSR	2 APR	HELIOCENTRIC ORBIT					
1964 026A		801	US	4 JUN	102.8	90.5	942	850		
1964 026B		805	US	4 JUN	103.4	90.1	963	886		
1964 026C		806	US	4 JUN	101.8	90.8	919	773		
1964 026D		809	US	4 JUN	102.9	90.5	947	854		
1964 026E		2986	US	4 JUN	102.9	90.5	945	854		
1964 031A		812	US	18 JUN	101.5	99.7	835	827		
1964 031B		813	US	18 JUN	101.5	99.7	836	828		
1964 031C		815	US	18 JUN	101.4	99.8	838	820		
1964 038A	ELEKTRON 3	829	USSR	10 JUL	156.1	60.8	6876	391		
1964 038B	ELEKTRON 4	830	USSR	10 JUL	1313.4	69.8	63820	2880		
1964 038C		831	USSR	10 JUL	159.8	60.7	6356	398		
1964 038D		832	USSR	10 JUL	1319.0	69.5	64159	2765		
1964 040A		836	US	17 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1964 040B		837	US	17 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1964 040C		838	US	17 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1964 041B		843	US	28 JUL	BARYCENTRIC ORBIT					
1964 045B		851	US	14 AUG	101.2	95.4	1390	250		
1964 047A	SYNCOM 3	858	US	19 AUG	CURRENT ELEMENTS NOT MAINTAINED					
1964 047B		862	US	19 AUG	CURRENT ELEMENTS NOT MAINTAINED					
1964 049D	COSMOS 41	869	USSR	22 AUG	714.6	71.1	37819	2380		
1964 049E		898	USSR	22 AUG	718.6	71.1	38033	2365		
1964 051A	EXPLORER 20	870	US	25 AUG	103.8	79.8	1017	866		
1964 051B		871	US	25 AUG	103.7	79.8	1008	862		
1964 053A	COSMOS 44	876	USSR	28 AUG	99.3	65.0	840	615		
1964 053B		877	USSR	28 AUG	99.4	65.0	780	688		
1964 054A	OGO 1	879	US	5 SEP	CURRENT ELEMENTS NOT MAINTAINED					
1964 063A		893	US	6 OCT	106.2	89.7	1078	1034		
1964 063B		897	US	6 OCT	106.5	89.7	1083	1054		
1964 063C		900	US	6 OCT	106.3	89.7	1072	1043		
1964 063D		901	US	6 OCT	106.5	89.7	1083	1055		
1964 063E		902	US	6 OCT	106.5	89.7	1083	1055		
1964 063F		903	US	6 OCT	106.3	89.7	1070	1046		
1964 064A	EXPLORER 22	899	US	10 OCT	104.6	79.6	1075	885		
1964 064B		907	US	10 OCT	104.6	79.6	1075	886		
1964 064C		976	US	10 OCT	103.8	79.3	1050	833		
1964 064D		977	US	10 OCT	105.3	80.0	1118	905		
1964 073A	MARINER 3	923	US	5 NOV	HELIOCENTRIC ORBIT					
1964 074A	EXPLORER 23	924	US	6 NOV	97.6	51.9	842	448		
1964 076B	EXPLORER 25	932	US	21 NOV	115.8	81.3	2463	529		
1964 076C		933	US	21 NOV	115.7	81.3	2446	532		
1964 076D		934	US	21 NOV	111.1	81.3	2033	527		
1964 076E		935	US	21 NOV	111.2	81.3	2043	530		
1964 076G		937	US	21 NOV	109.4	81.3	1904	500		
1964 076J		941	US	21 NOV	112.0	81.3	2123	523		
1964 076K		960	US	21 NOV	112.0	81.3	2093	553		
1964 076N		940	US	21 NOV	108.8	81.3	1833	516		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1964 LAUNCHES (CONT'D)										
1964 077A	MARINER 4	938	US	28 NOV	HELIOCENTRIC ORBIT					
1964 077B		942	US	28 NOV	HELIOCENTRIC ORBIT					
1964 078C	ZOND 2	945	USSR	30 NOV	HELIOCENTRIC ORBIT					
1964 083A		953	US	13 DEC	106.1	89.7	1072	1022		
1964 083B		956	US	13 DEC	106.1	89.7	1081	1018		
1964 083C		959	US	13 DEC	106.2	89.7	1084	1021		
1964 083D		965	US	13 DEC	106.2	89.7	1087	1024		
1964 083E		966	US	13 DEC	106.2	89.7	1082	1023		
1964 083F		967	US	13 DEC	106.1	89.7	1080	1019		
1964 083G		1099	US	13 DEC	106.2	89.7	1084	1021		
1964 083H		1528	US	13 DEC	103.9	89.8	998	896		
1964 083J		1608	US	13 DEC	106.0	89.7	1074	1015		
1964 083K		2798	US	13 DEC	101.5	89.7	872	792		
1964 083L		5444	US	13 DEC	101.5	89.7	871	793		
1964 083M		5540	US	13 DEC	101.6	89.7	863	817		
1964 086A	EXPLORER 26	963	US	21 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1964 086C		5992	US	21 DEC	149.7	18.0	5747	171		
1965 LAUNCHES										
1965 003A		973	US	19 JAN	94.6	98.6	593	415		
1965 004A	TIROS 9	978	US	22 JAN	119.1	96.3	2577	707		
1965 004B		979	US	22 JAN	119.1	96.4	2583	706		
1965 004C		1312	US	22 JAN	117.9	96.3	2504	674		
1965 004D		1313	US	22 JAN	120.3	96.4	2659	732		
1965 007A	OSO 2	987	US	3 FEB	95.9	32.8	593	528		
1965 007B		988	US	3 FEB	91.6	32.8	362	348		
1965 008A		1001	US	11 FEB	145.3	32.1	2793	2762		
1965 008B		1000	US	11 FEB	145.6	32.1	2798	2779		
1965 008C		1002	US	11 FEB	145.7	32.1	2806	2778		
1965 009A	PEGASUS 1	1085	US	16 FEB	93.6	31.7	485	412		
1965 009B		1088	US	16 FEB	96.2	31.7	669	482		
1965 010B		1087	US	17 FEB	BARYCENTRIC ORBIT					
1965 014A	COSMOS 58	1097	USSR	26 FEB	96.3	65.0	626	545		
1965 014B		1098	USSR	26 FEB	96.1	65.0	660	490		
1965 016A	GREB	1271	US	9 MAR	103.4	70.0	939	905		
1965 016B	GRAVITY GRADIENT 2	1244	US	9 MAR	103.4	70.0	939	905		
1965 016C	GRAVITY GRADIENT 3	1292	US	9 MAR	103.3	70.0	937	902		
1965 016D	SOLAR RAD.	1291	US	9 MAR	103.4	70.0	940	906		
1965 016E	EGRS 3	1208	US	9 MAR	103.4	70.0	938	905		
1965 016F	OSCAR 3	1293	US	9 MAR	103.3	70.0	933	901		
1965 016G	SURCAL	1310	US	9 MAR	101.8	70.0	865	833		
1965 016H	DODECAHEDRON	1272	US	9 MAR	103.4	70.0	941	904		
1965 016J		1245	US	9 MAR	103.4	70.0	938	903		
1965 020D - 020FE			USSR	15 MAR	SEE NOTE 4*					4*
1965 021A		1273	US	18 MAR	96.8	98.9	705	512		
1965 021C		1289	US	18 MAR	95.2	99.0	590	478		
1965 021F		1463	US	18 MAR	95.7	99.0	631	479		
1965 023B		1298	US	21 MAR	HELIOCENTRIC ORBIT					
1965 027A		1314	US	3 APR	111.5	90.2	1319	1275		
1965 027B	EGRS 4	1315	US	3 APR	111.4	90.2	1316	1271		
1965 027C		1316	US	3 APR	111.1	90.2	1316	1247		
1965 027D		1389	US	3 APR	111.2	90.2	1305	1262		
1965 027E		1399	US	3 APR	101.0	90.5	867	750		
1965 028A	EARLY BIRD	1317	ITSO	6 APR	1436.8	10.4	35817	35784		
1965 028B		1318	US	6 APR	CURRENT ELEMENTS NOT MAINTAINED					
1965 030A	MOLNIYA 1	1324	USSR	23 APR	720.0	64.7	39380	1086		
1965 030D		1967	USSR	23 APR	702.6	64.8	38702	901		
1965 032A	EXPLORER 27	1328	US	29 APR	107.7	41.1	1320	927	136.740	5*
1965 032B		1358	US	29 APR	107.7	41.1	1319	928		
1965 032C		1995	US	29 APR	106.3	41.1	1362	749		
1965 032D		2011	US	29 APR	108.8	41.1	1282	1063		
1965 034A		1359	US	6 MAY	157.0	32.1	3739	2783		
1965 034B		1360	US	6 MAY	309.8	32.1	14797	2777		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1965 LAUNCHES (CONT'D)										
1965 034C		1361	US	6 MAY	145.5	32.1	2799	2774		
1965 034D		2529	US	6 MAY	309.7	32.1	14796	2777		
1965 038A		1377	US	20 MAY	99.5	98.0	930	548		
1965 038B		1378	US	20 MAY	99.3	98.0	914	546		
1965 038C		1379	US	20 MAY	98.8	98.2	867	544		
1965 038E		1461	US	20 MAY	99.9	98.2	966	544		
1965 038F		1462	US	20 MAY	96.9	98.4	710	518		
1965 038G		1475	US	20 MAY	99.1	98.0	896	540		
1965 039A	PEGASUS 2	1381	US	25 MAY	95.1	31.7	588	463		
1965 039B		1385	US	25 MAY	96.5	31.7	683	495		
1965 044A	LUNIK 6	1393	USSR	8 JUN	HELIOCENTRIC ORBIT					
1965 048A		1420	US	24 JUN	106.8	89.8	1140	1025		
1965 048B		1428	US	24 JUN	106.5	89.8	1114	1023		
1965 048C		1425	US	24 JUN	106.8	89.8	1139	1026		
1965 048D		1435	US	24 JUN	106.6	89.8	1130	1017		
1965 048E		2701	US	24 JUN	106.4	89.8	1108	1019		
1965 048F		3592	US	24 JUN	106.4	89.8	1110	1020		
1965 051A	TIROS 10	1430	US	2 JUL	100.5	98.1	834	740		
1965 051B		1433	US	2 JUL	100.5	98.2	831	738		
1965 051C		1440	US	2 JUL	98.8	98.5	804	602		
1965 051D		1529	US	2 JUL	101.9	98.6	882	820		
1965 053B	COSMOS 72	1442	USSR	16 JUL	94.0	56.0	486	463		
1965 053D	COSMOS 74	1444	USSR	16 JUL	94.5	56.0	526	472		
1965 053E	COSMOS 75	1445	USSR	16 JUL	94.6	56.0	526	477		
1965 053F		1448	USSR	16 JUL	95.6	56.0	587	514		
1965 056A	ZOND 3	1454	USSR	18 JUL	HELIOCENTRIC ORBIT					
1965 058A		1458	US	20 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1965 058B		1459	US	20 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1965 058C		1460	US	20 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1965 063A	EGRS 5	1506	US	10 AUG	122.2	69.2	2426	1134		
1965 063B		1502	US	10 AUG	122.2	69.2	2425	1136		
1965 064A	CENTAUR 6	1503	US	11 AUG	BARYCENTRIC ORBIT					
1965 065A		1504	US	13 AUG	108.0	90.0	1186	1085		
1965 065B		1508	US	13 AUG	107.8	89.9	1158	1097		
1965 065C		1510	US	13 AUG	107.5	90.0	1160	1065		
1965 065D		1511	US	13 AUG	108.0	90.0	1189	1088		
1965 065E		1512	US	13 AUG	108.0	90.0	1190	1088		
1965 065F		1514	US	13 AUG	108.0	90.0	1191	1087		
1965 065G		1515	US	13 AUG	107.8	90.0	1179	1078		
1965 065H		1520	US	13 AUG	108.0	90.0	1190	1087		
1965 065J		1521	US	13 AUG	108.0	90.0	1190	1088		
1965 065K		1577	US	13 AUG	108.0	90.0	1190	1086		
1965 065L		1522	US	13 AUG	108.1	90.0	1192	1088		
1965 065M		2335	US	13 AUG	106.1	89.9	1123	977		
1965 065N		3809	US	13 AUG	106.0	89.9	1093	999		
1965 065P		3810	US	13 AUG	105.3	89.9	1057	964		
1965 065Q		5265	US	13 AUG	107.8	89.9	1159	1098		
1965 065R		5363	US	13 AUG	105.4	89.9	1062	968		
1965 065S		6290	US	13 AUG	106.1	89.9	1092	1006		
1965 070A	COSMOS 80	1570	USSR	3 SEP	114.9	56.0	1547	1361		
1965 070B	COSMOS 81	1571	USSR	3 SEP	115.3	56.0	1550	1390		
1965 070C	COSMOS 82	1572	USSR	3 SEP	115.6	56.0	1557	1415		
1965 070D	COSMOS 83	1573	USSR	3 SEP	116.0	56.0	1564	1442		
1965 070E	COSMOS 84	1574	USSR	3 SEP	116.4	56.0	1572	1468		
1965 070F		1575	USSR	3 SEP	114.5	56.1	1511	1362		
1965 070G		3045	USSR	3 SEP	116.0	55.4	1742	1261		
1965 072A		1580	US	10 SEP	101.7	98.8	1041	648		
1965 072D		1583	US	10 SEP	101.6	98.8	1028	647		
1965 072E		1931	US	10 SEP	103.0	98.7	1157	647		
1965 072F		1932	US	10 SEP	100.3	98.3	910	642		
1965 073A	COSMOS 86	1584	USSR	18 SEP	115.0	56.0	1633	1282		
1965 073B	COSMOS 87	1585	USSR	18 SEP	115.4	56.0	1643	1309		
1965 073C	COSMOS 88	1586	USSR	18 SEP	115.8	56.0	1654	1332		
1965 073D	COSMOS 89	1587	USSR	18 SEP	116.2	56.0	1666	1358		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1965 LAUNCHES (CONT'D)										
1965 073E	COSMOS 90	1588	USSR	18 SEP	116.6	56.0	1676	1384		
1965 073F		1589	USSR	18 SEP	116.8	56.0	1687	1387		
1965 073G		1590	USSR	18 SEP	116.3	56.0	1655	1377		
1965 073H		1591	USSR	18 SEP	116.5	56.0	1671	1381		
1965 073J		1617	USSR	18 SEP	117.3	56.1	1754	1369		
1965 073K		1618	USSR	18 SEP	117.5	56.1	1757	1387		
1965 073L		2647	USSR	18 SEP	116.0	56.0	1654	1355		
1965 078A		1613	US	5 OCT	123.6	144.2	3269	412		
1965 078B		1616	US	5 OCT	123.2	144.2	3234	412		
1965 081A	OGO 2	1620	US	14 OCT	100.5	87.3	1168	399		
1965 081B		1625	US	14 OCT	101.4	87.3	1247	411		
1965 082B -	082UJ		US	15 OCT	SEE NOTE 6*					6*
1965 089A	EXPLORER 29	1726	US	6 NOV	120.3	59.3	2273	1116		
1965 089B		1729	US	6 NOV	120.2	59.3	2271	1117		
1965 089C		2700	US	6 NOV	119.1	59.5	2218	1070		
1965 089D		2888	US	6 NOV	121.3	59.1	2329	1151		
1965 091A	VENERA 2	1730	USSR	12 NOV	HELIOCENTRIC ORBIT					
1965 092D		1736	USSR	16 NOV	HELIOCENTRIC ORBIT					
1965 093A	EXPLORER 30	1738	US	19 NOV	100.6	59.7	891	688		
1965 093B		1739	US	19 NOV	100.5	59.7	863	710		
1965 093C		2013	US	19 NOV	99.9	59.6	831	683		
1965 093D		2088	US	19 NOV	101.1	59.7	908	720		
1965 096A	A-1	1778	FRANCE	26 NOV	108.4	34.2	1777	526		
1965 096B		1805	FRANCE	26 NOV	108.1	34.2	1754	525		
1965 096D		1996	FRANCE	26 NOV	107.2	34.2	1667	525		
1965 098A	ALOUETTE 2	1804	CANADA	29 NOV	120.7	79.8	2921	508		
1965 098B	EXPLORER 31	1806	US	29 NOV	121.1	79.8	2956	507		
1965 098C		1807	US	29 NOV	120.8	79.8	2930	508		
1965 098D		1808	US	29 NOV	118.3	79.8	2710	508		
1965 098E		1944	US	29 NOV	118.2	79.7	2695	509		
1965 098F		1948	US	29 NOV	119.6	79.8	2820	513		
1965 098G		1951	US	29 NOV	119.5	79.7	2813	510		
1965 098H		2092	US	29 NOV	120.7	79.8	2923	510		
1965 098J		2153	US	29 NOV	120.6	79.7	2912	505		
1965 101A	FR-1	1814	FRANCE	6 DEC	99.7	75.8	753	739		
1965 101B		1815	US	6 DEC	99.7	75.8	757	742		
1965 101C		1934	FRANCE	6 DEC	98.9	76.4	734	688		
1965 101D		1935	FRANCE	6 DEC	98.2	75.2	706	647		
1965 105A	PIONEER 6	1841	US	16 DEC	HELIOCENTRIC ORBIT					
1965 106A	COSMOS 100	1843	USSR	17 DEC	97.3	65.0	716	551		
1965 106B		1844	USSR	17 DEC	97.2	64.9	639	616		
1965 108B	LES 4	1870	US	21 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1965 108C	OSCAR 4	1902	US	21 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1965 108G		4476	US	21 DEC	145.5	26.4	5437	133		
1965 109A		1864	US	22 DEC	104.9	89.0	1082	904		
1965 109B		1865	US	22 DEC	104.9	89.0	1083	905		
1965 109C		2086	US	22 DEC	103.3	89.1	951	881		
1965 109D		2226	US	22 DEC	107.1	89.0	1289	901		
1965 109E		2353	US	22 DEC	105.3	89.3	1135	888		
1965 112A	COSMOS 103	1868	USSR	28 DEC	96.4	56.0	602	576		
1965 112B		1869	USSR	28 DEC	96.3	56.0	601	563		
1965 112Q		1937	USSR	28 DEC	96.6	55.9	630	561		
1966 LAUNCHES										
1966 000A		2428	UNKN	UNKN	96.7	35.0	1019	181		7*
1966 000B		2429	UNKN	UNKN	CURRENT ELEMENTS NOT MAINTAINED					7*
1966 000C		2430	UNKN	UNKN	CURRENT ELEMENTS NOT MAINTAINED					7*
1966 005A		1952	US	28 JAN	105.8	89.7	1210	859		
1966 005B		1953	US	28 JAN	105.8	89.8	1211	860		
1966 005C		2140	US	28 JAN	107.7	89.9	1381	863		
1966 005D		2141	US	28 JAN	104.2	89.8	1075	843		
1966 005E		2889	US	28 JAN	109.5	89.5	1340	1077		
1966 005F		2989	US	28 JAN	104.2	89.7	1062	862		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1966 LAUNCHES (CONT'D)										
1966 005G		4587	US	28 JAN	105.9	89.9	1052	1023		
1966 006D		2001	USSR	31 JAN	BARYCENTRIC ORBIT					
1966 008A	ESSA 1	1982	US	3 FEB	100.1	97.8	837	700		
1966 008B		1983	US	3 FEB	100.3	97.8	856	696		
1966 008C		2085	US	3 FEB	98.9	97.7	739	676		
1966 008D		2118	US	3 FEB	101.1	97.9	941	689		
1966 008E		2154	US	3 FEB	100.0	97.7	821	708		
1966 013A	D-1A	2016	FRANCE	17 FEB	117.9	34.0	2673	501		
1966 013B		2017	FRANCE	17 FEB	117.7	34.0	2657	502		
1966 013F		2023	FRANCE	17 FEB	114.0	34.0	2344	475		
1966 013G		2161	FRANCE	17 FEB	117.1	34.1	2589	511		
1966 013J		3970	FRANCE	17 FEB	113.8	34.0	2312	489		
1966 013K		5420	FRANCE	17 FEB	113.7	34.0	2299	490		
1966 013L		5959	FRANCE	17 FEB	113.5	34.0	2285	487		
1966 016A	ESSA 2	2091	US	28 FEB	113.4	101.2	1417	1356		
1966 016B		2096	US	28 FEB	113.4	101.1	1418	1356		
1966 016C		2223	US	28 FEB	111.9	100.8	1388	1242		
1966 016D		2224	US	28 FEB	115.0	100.9	1567	1351		
1966 016E		6214	US	28 FEB	114.4	101.4	1521	1341		
1966 024A		2119	US	26 MAR	105.2	89.8	1119	893		
1966 024B		2120	US	26 MAR	105.2	89.8	1122	893		
1966 024C		2386	US	26 MAR	105.0	89.9	1105	893		
1966 024D		3590	US	26 MAR	98.9	89.7	742	679		
1966 025A	OV1-4	2121	US	30 MAR	104.0	144.5	1010	885		
1966 025B	OV1-5	2122	US	30 MAR	105.6	144.6	1057	984		
1966 025C		2123	US	30 MAR	105.6	144.6	1056	986		
1966 025D		2124	US	30 MAR	104.0	144.4	1011	885		
1966 025E		3611	US	30 MAR	105.0	144.5	1062	929		
1966 025G		5361	US	30 MAR	105.1	144.6	1041	958		
1966 025H		5599	US	30 MAR	105.0	144.5	1075	918		
1966 026A		2125	US	31 MAR	100.3	98.3	926	625		
1966 026B		2129	US	31 MAR	100.1	98.2	909	620		
1966 026D		2177	US	31 MAR	101.9	98.8	1083	625		
1966 026E		2178	US	31 MAR	97.9	98.4	717	602		
1966 026F		2179	US	31 MAR	99.7	98.1	876	619		
1966 027A	LUNA 10	2126	USSR	31 MAR	SELENOCENTRIC ORBIT					
1966 027D		2130	USSR	31 MAR	HELIOCENTRIC ORBIT					
1966 027E		2131	USSR	31 MAR	BARYCENTRIC ORBIT					
1966 027F		2132	USSR	31 MAR	BARYCENTRIC ORBIT					
1966 031A	OAO 1	2142	US	8 APR	100.8	35.0	801	790		
1966 031B		2144	US	8 APR	100.7	35.0	800	780		
1966 031C		2145	US	8 APR	99.7	35.0	750	740		
1966 034A	OV3-1	2150	US	22 APR	147.5	82.4	5395	351		
1966 034B		2167	US	22 APR	142.1	82.4	4941	349		
1966 034D		2209	US	22 APR	135.0	82.3	4357	325		
1966 038A	COSMOS 118	2168	USSR	11 MAY	96.5	65.0	603	584		
1966 038B		2169	USSR	11 MAY	96.4	64.9	642	535		
1966 040A	NIMBUS 2	2173	US	15 MAY	108.0	100.5	1180	1098		
1966 040B		2174	US	15 MAY	107.8	100.4	1173	1084		
1966 041A		2176	US	19 MAY	103.2	89.7	978	852		
1966 041B		2180	US	19 MAY	103.3	89.7	983	853		
1966 041C		2225	US	19 MAY	100.9	89.7	844	766		
1966 041D		2644	US	19 MAY	105.5	89.7	1190	848		
1966 041E		3591	US	19 MAY	103.3	89.7	979	853		
1966 041F		4555	US	19 MAY	103.2	89.7	975	848		
1966 044A	EXPLORER 32	2183	US	25 MAY	107.5	64.5	1972	255		
1966 045B		2187	US	20 MAY	BARYCENTRIC ORBIT					
1966 049A	OGO 3	2195	US	7 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1966 052A		2201	US	10 JUN	143.0	40.8	4724	641		
1966 052B		2206	US	10 JUN	143.0	40.8	4716	642		
1966 052C		2498	US	10 JUN	140.5	40.6	4567	585		
1966 052D		2516	US	10 JUN	145.1	41.0	4836	702		
1966 053A		2207	US	16 JUN	1333.9	4.2	33877	33645		
1966 053B		2215	US	16 JUN	1334.6	4.1	33867	33683		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1966 LAUNCHES (CONT'D)										
1966 053C		2216	US	16 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1966 053D		2217	US	16 JUN	1336.4	4.0	33923	33702		
1966 053E		2218	US	16 JUN	1338.5	4.2	34014	33694		
1966 053F		2219	US	16 JUN	1340.8	4.2	34120	33681		
1966 053G		2220	US	16 JUN	1343.9	4.2	34192	33734		
1966 053H		2221	US	16 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1966 053J		2222	US	16 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1966 056A	PAGEOS 1	2253	US	24 JUN	180.0	84.8	5825	2543		
1966 056B - 056CF			US	24 JUN	SEE NOTE 8*					8*
1966 057A	COSMOS 122	2254	USSR	25 JUN	96.5	64.9	607	577		
1966 057B		2257	USSR	25 JUN	96.2	64.9	640	521		
1966 058A	EXPLORER 33	2258	US	1 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1966 058C		2260	US	1 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1966 063A	OVI-8	2324	US	14 JUL	97.1	144.1	646	590		
1966 063B		2327	US	14 JUL	104.9	144.2	1006	978		
1966 063C		2328	US	14 JUL	105.2	144.2	1011	996		
1966 063D		2329	US	14 JUL	105.2	144.2	1007	998		
1966 063E		2337	US	14 JUL	105.2	144.2	1010	1000		
1966 070A	OV3-3	2389	US	4 AUG	132.5	81.4	4113	356		
1966 070B		2404	US	4 AUG	127.3	81.4	3657	356		
1966 070D		2800	US	4 AUG	135.8	81.4	4331	422		
1966 073B		2395	US	10 AUG	BARYCENTRIC ORBIT					
1966 075A	PIONEER 7	2398	US	17 AUG	HELIOCENTRIC ORBIT					
1966 075C		2402	US	17 AUG	HELIOCENTRIC ORBIT					
1966 076A		2401	US	18 AUG	106.7	88.8	1103	1049		
1966 076B		2413	US	18 AUG	106.7	88.8	1103	1050		
1966 076C		2580	US	18 AUG	105.2	89.1	1085	929		
1966 076D		2702	US	18 AUG	106.3	88.5	1218	1081		
1966 076E		7558	US	18 AUG	106.3	88.8	1085	1029		
1966 076F		8000	US	18 AUG	106.3	88.8	1086	1035		
1966 076G		9401	US	18 AUG	106.6	88.8	1106	1038		
1966 077A		2403	US	19 AUG	167.4	89.8	3706	3667		
1966 077B	EGRS 7	2411	US	19 AUG	157.5	89.8	3701	3677		
1966 077C	ERS 15	2412	US	19 AUG	167.6	89.8	3701	3686		
1966 078A	LUNA 11	2406	USSR	24 AUG	SELENOCENTRIC ORBIT					
1966 082A		2418	US	16 SEP	100.7	98.5	896	692		
1966 082B		2422	US	16 SEP	100.7	98.6	895	692		
1966 084B		2426	US	20 SEP	BARYCENTRIC ORBIT					
1966 087A	ESSA 3	2435	US	2 OCT	114.5	101.0	1488	1388		
1966 087B		2436	US	2 OCT	114.5	101.0	1488	1386		
1966 087C		2518	US	2 OCT	115.9	100.8	1562	1434		
1966 087D		2775	US	2 OCT	113.2	101.6	1474	1283		
1966 087E		6213	US	2 OCT	114.2	101.5	1466	1379		
1966 087F		8791	US	2 OCT	114.6	101.4	1550	1330		
1966 089A		2481	US	5 OCT	167.5	90.3	3700	3683		
1966 089B	EGRS 8	2520	US	5 OCT	167.6	90.3	3696	3692		
1966 094A	LUNA 12	2508	USSR	22 OCT	SELENOCENTRIC ORBIT					
1966 095B		2513	US	25 OCT	BARYCENTRIC ORBIT					
1966 096A	INTELSAT 2 F-1	2514	ITSO	26 OCT	718.0	17.5	37286	3079		
1966 110A	ATS 1	2608	US	7 DEC	1436.3	8.1	35793	35787	136.470.137.350	5*
1966 111A	OV1-9	2610	US	11 DEC	141.6	99.0	4775	476		
1966 111B	OV1-10	2611	US	11 DEC	98.5	93.4	747	629		
1966 111C		2621	US	11 DEC	98.6	93.4	757	634		
1966 111D		2622	US	11 DEC	141.5	99.0	4763	478		
1967 LAUNCHES										
1967 001A	INTELSAT 2 F-2	2639	ITSO	11 JAN	1437.1	6.6	35858	35755		
1967 001B - 001X			US	11 JAN	SEE NOTE 9*					9*
1967 003A		2645	US	18 JAN	1329.5	3.8	33823	33523		
1967 003B		2649	US	18 JAN	1329.9	3.6	33831	33532		
1967 003C		2650	US	18 JAN	1330.6	3.6	33898	33494		
1967 003D		2651	US	18 JAN	1332.1	3.6	33875	33576		
1967 003E		2652	US	18 JAN	1334.1	3.7	33972	33559		

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1967 LAUNCHES (CONT'D)										
1967 003F		2653	US	18 JAN	1336.5	8.1	33988	33638		
1967 003G		2654	US	18 JAN	1339.5	3.8	34112	33636		
1967 003H		2655	US	18 JAN	1343.0	3.8	34237	33651		
1967 003J		2660	US	18 JAN	CURRENT ELEMENTS NOT MAINTAINED					
1967 006A	ESSA 4	2657	US	26 JAN	113.4	101.9	1441	1328		
1967 006B		2661	US	26 JAN	113.6	101.9	1444	1344		
1967 006C		2706	US	26 JAN	114.2	102.1	1450	1395		
1967 006D		2707	US	26 JAN	112.6	101.8	1464	1232		
1967 006E		5971	US	26 JAN	113.1	101.9	1458	1285		
1967 010A		2669	US	8 FEB	101.4	99.1	866	788		
1967 010B		2741	US	8 FEB	101.4	99.0	871	784		
1967 011A	DIADEME 1	2674	FRANCE	8 FEB	103.7	39.9	1305	562		
1967 011B		2671	FRANCE	8 FEB	103.9	39.9	1322	563		
1967 011G		2688	FRANCE	8 FEB	101.0	40.0	1069	541		
1967 011H		2689	FRANCE	8 FEB	103.5	39.9	1319	535		
1967 011L		2692	FRANCE	8 FEB	101.8	39.9	1143	549		
1967 011M		2900	FRANCE	8 FEB	101.1	39.9	1079	541		
1967 011N		2990	FRANCE	8 FEB	100.8	39.9	1053	541		
1967 011P		3742	FRANCE	8 FEB	101.2	39.9	1091	544		
1967 011Q		4009	FRANCE	8 FEB	108.4	39.4	1739	569		
1967 014A	DIADEME 2	2680	FRANCE	15 FEB	109.8	39.4	1850	588		
1967 014B		2682	FRANCE	15 FEB	110.0	39.4	1866	589		
1967 014C		2684	FRANCE	15 FEB	109.4	39.9	1818	585		
1967 014E		2683	FRANCE	15 FEB	108.1	39.4	1711	569		
1967 014F		2685	FRANCE	15 FEB	109.1	38.9	1797	577		
1967 014G		3589	FRANCE	15 FEB	115.2	38.8	2323	605		
1967 014H		3935	FRANCE	15 FEB	108.4	39.4	1735	569		
1967 018A	COSMOS 144	2695	USSR	28 FEB	96.1	81.1	597	554		
1967 018B		2696	USSR	28 FEB	96.3	81.2	663	507		
1967 020A	OSO 3	2703	US	8 MAR	94.8	32.8	521	500		
1967 026A	INTELSAT 2 F-3	2717	ITSO	23 MAR	1434.7	7.3	35843	35677		
1967 027A	COSMOS 151	2720	USSR	24 MAR	96.7	56.0	625	577		
1967 027B		2721	USSR	24 MAR	96.6	56.0	621	571		
1967 034A		2754	US	14 APR	106.4	90.2	1077	1050		
1967 034B		2755	US	14 APR	106.5	90.2	1079	1053		
1967 034C		2777	US	14 APR	104.0	90.3	1070	835		
1967 034D		2778	US	14 APR	108.6	90.1	1264	1069		
1967 034E		4843	US	14 APR	104.6	90.2	987	974		
1967 034F		6718	US	14 APR	104.6	90.2	998	962		
1967 034G		7670	US	14 APR	106.0	90.1	1064	1028		
1967 035B		2764	US	17 APR	BARYCENTRIC ORBIT					
1967 036A	ESSA 5	2757	US	20 APR	113.5	101.8	1423	1356		
1967 036B		2758	US	20 APR	113.5	101.8	1422	1359		
1967 036C		2976	US	20 APR	112.3	102.1	1413	1261		
1967 036D		2977	US	20 APR	114.6	101.8	1486	1392		
1967 039A	COSMOS 156	2762	USSR	27 APR	96.4	81.1	613	564		
1967 039B		2763	USSR	27 APR	96.7	81.1	677	527		
1967 040A		2765	US	28 APR	6689.6	37.3	119465	102991		
1967 040B		2766	US	28 APR	6708.7	37.1	123849	99054		
1967 040C	ERS 18	2767	US	28 APR	CURRENT ELEMENTS NOT MAINTAINED					
1967 040D	ERS 20	2768	US	28 APR	CURRENT ELEMENTS NOT MAINTAINED					
1967 040F	ERS 27	2769	US	28 APR	CURRENT ELEMENTS NOT MAINTAINED					
1967 040F		2770	US	28 APR	CURRENT ELEMENTS NOT MAINTAINED					
1967 043B		2780	US	9 MAY	97.8	84.9	770	546		
1967 045A	COSMOS 158	2801	USSR	15 MAY	100.4	74.0	821	736		
1967 045B		2802	USSR	15 MAY	100.5	74.0	843	729		
1967 045C		2823	USSR	15 MAY	100.2	74.0	816	724		
1967 045D		3737	USSR	15 MAY	100.1	74.0	819	715		
1967 046A	COSMOS 159	2805	USSR	17 MAY	1173.3	52.8	60247	696		
1967 046F		2924	USSR	17 MAY	1171.0	52.6	60233	616		
1967 048A		2807	US	18 MAY	106.9	89.6	1100	1072		
1967 048B		2811	US	18 MAY	106.9	89.6	1098	1073		
1967 053A		2826	US	31 MAY	103.2	69.9	920	902		
1967 053B		2825	US	31 MAY	103.3	69.9	923	914		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1967 LAUNCHES (CONT'D)										
1967 053C	GRAVITY GRADIENT 4	2828	US	31 MAY	103.3	69.9	924	914		
1967 053D	GRAVITY GRADIENT 5	2834	US	31 MAY	103.3	69.9	924	915		
1967 053E		2847	US	31 MAY	103.3	69.9	921	913		
1967 053F		2872	US	31 MAY	103.3	69.9	922	914		
1967 053G		2873	US	31 MAY	103.3	69.9	924	914		
1967 053H		2874	US	31 MAY	103.3	69.9	923	915		
1967 053J		2909	US	31 MAY	103.0	69.9	909	900		
1967 060A	MARINER 5	2845	US	14 JUN	HELIOCENTRIC ORBIT					
1967 060B		2846	US	14 JUN	HELIOCENTRIC ORBIT					
1967 065A	EGRS 9	2861	US	29 JUN	172.1	89.7	3940	3804		
1967 065B	AURORA 1	2876	US	29 JUN	172.1	89.7	3938	3807		
1967 065C		2877	US	29 JUN	172.1	89.7	3922	3823		
1967 066A	TITAN 3 C-14	2862	US	1 JUL	1309.7	3.9	33567	32983		
1967 066B		2863	US	1 JUL	1310.3	3.7	33588	32986		
1967 066C		2364	US	1 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1967 066D		2865	US	1 JUL	1313.6	4.3	33558	33148		
1967 066E		2866	US	1 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1967 066F	DODGE	2867	US	1 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1967 066G		2868	US	1 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1967 068B		2883	US	14 JUL	BARYCENTRIC ORBIT					
1967 070A	EXPLORER 35	2884	US	19 JUL	SELENOCENTRIC ORBIT					
1967 072C		2897	US	27 JUL	89.1	101.5	233	232		
1967 072D	OV1-12	2901	US	27 JUL	94.4	101.6	496	485		
1967 075B		2908	US	1 AUG	BARYCENTRIC ORBIT					
1967 080A		2920	US	23 AUG	102.1	98.6	889	831		
1967 080B		2940	US	23 AUG	102.1	98.6	888	831		
1967 084B		2938	US	8 SEP	BARYCENTRIC ORBIT					
1967 092A		2965	US	25 SEP	106.7	89.2	1112	1041		
1967 092B		2967	US	25 SEP	106.7	89.2	1110	1042		
1967 092C		2994	US	25 SEP	104.3	89.4	1043	888		
1967 092D		3122	US	25 SEP	109.1	89.0	1335	1041		
1967 094A	INTELSAT 2 F-4	2969	ITSO	28 SEP	1437.6	7.4	35824	35810		
1967 094C		2971	US	28 SEP	CURRENT ELEMENTS NOT MAINTAINED					
1967 096A		2980	US	11 OCT	99.9	99.2	852	665		
1967 096B		2985	US	11 OCT	99.9	99.2	849	666		
1967 100A	OSO 4	3000	US	18 OCT	95.0	32.9	530	505		
1967 100B		3004	US	18 OCT	94.5	32.9	503	482		
1967 102A	COSMOS 184	3010	USSR	24 OCT	96.5	81.1	611	582		
1967 102B		3011	USSR	24 OCT	96.8	81.1	682	534		
1967 104B		3019	USSR	27 OCT	98.2	64.0	878	469		
1967 108A	COSMOS 189	3021	USSR	30 OCT	92.7	73.9	417	404		
1967 108B		3023	USSR	30 OCT	94.4	73.9	508	477		
1967 111A	ATS 3	3029	US	5 NOV	1436.1	6.5	35857	35715	136.470.137.350	5*
1967 112B		3034	US	7 NOV	BARYCENTRIC ORBIT					
1967 114A	ESSA 6	3035	US	10 NOV	114.8	102.2	1487	1411		
1967 114B		3036	US	10 NOV	114.8	102.2	1487	1412		
1967 114C		3051	US	10 NOV	114.1	101.3	1487	1347		
1967 114D		3123	US	10 NOV	115.4	102.4	1498	1453		
1967 114E		5443	US	10 NOV	114.6	101.4	1488	1391		
1967 116A	COSMOS 192	3047	USSR	23 NOV	99.7	74.0	751	741		
1967 116B		3048	USSR	23 NOV	99.7	74.0	754	741		
1967 123A	PIONEER 8	3066	US	13 DEC	HELIOCENTRIC ORBIT					
1967 127A	COSMOS 198	3081	USSR	27 DEC	103.4	65.1	943	901		
1968 LAUNCHES										
1968 001B		3092	US	7 JAN	BARYCENTRIC ORBIT					
1968 002A	EXPLORER 36	3093	US	11 JAN	112.2	105.8	1575	1084	136.320	5*
1968 002B		3094	US	11 JAN	112.1	105.8	1570	1083		
1968 002C		3126	US	11 JAN	112.3	106.0	1587	1086		
1968 002D		3127	US	11 JAN	112.1	105.3	1576	1078		
1968 006C		3103	USSR	19 JAN	94.2	73.9	307	461		
1968 011A	COSMOS 203	3129	USSR	20 FEB	109.2	74.0	1204	1185		
1968 011B		3131	USSR	20 FEB	109.3	74.0	1207	1185		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1968 LAUNCHES (CONT'D)										
1968 011C		3147	USSR	20 FEB	103.2	74.0	1103	723		
1968 012A		3133	US	2 MAR	106.9	89.9	1144	1025		
1968 012B		3137	US	2 MAR	106.9	89.9	1144	1025		
1968 012C		3213	US	2 MAR	105.1	89.8	1110	891		
1968 012D		3214	US	2 MAR	108.8	90.1	1323	1027		
1968 013A	ZOND 4	3134	USSR	2 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1968 014A	OGO 5	3138	US	4 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1968 014B		3145	US	4 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1968 017A	EXPLORER 37	3141	US	5 MAR	97.8	59.3	831	482		
1968 017B		3146	US	5 MAR	97.1	59.3	763	481		
1968 017D		3328	US	5 MAR	99.8	59.6	874	633		
1968 017E		5743	US	5 MAR	93.1	59.2	502	357		
1968 019A	COSMOS 206	3150	USSR	14 MAR	96.5	81.2	613	577		
1968 019B		3151	USSR	14 MAR	96.8	81.2	689	533		
1968 023A	COSMOS 209	3158	USSR	22 MAR	103.1	65.3	936	879		
1968 026A	OV1-13	3173	US	6 APR	199.4	99.9	9276	588		
1968 026B	OV1-14	3174	US	6 APR	207.7	99.9	9931	555		
1968 026C		3177	US	6 APR	207.9	99.9	9956	546		
1968 026D		3212	US	6 APR	199.4	99.9	9269	589		
1968 027A	LUNA 14	3178	USSR	7 APR	SELENOCENTRIC ORBIT					
1968 040A	COSMOS 220	3229	USSR	7 MAY	98.9	74.0	749	671		
1968 040B		3230	USSR	7 MAY	98.9	74.0	751	671		
1968 040C		3231	USSR	7 MAY	98.6	74.0	733	653		
1968 042A		3266	US	23 MAY	102.0	98.6	899	819		
1968 042B		3271	US	23 MAY	102.1	98.6	900	819		
1968 049A	COSMOS 226	3282	USSR	12 JUN	96.3	81.1	606	559		
1968 049B		3283	USSR	12 JUN	96.6	81.2	680	520		
1968 050A		3284	US	13 JUN	1335.2	2.4	33847	33728		
1968 050B		3285	US	13 JUN	1335.5	2.4	33855	33735		
1968 050C		3286	US	13 JUN	1336.3	2.3	33902	33719		
1968 050D		3287	US	13 JUN	1337.8	2.4	33962	33717		
1968 050E		3288	US	13 JUN	1339.8	2.4	34044	33716		
1968 050F		3289	US	13 JUN	1342.2	2.4	34112	33742		
1968 050G		3290	US	13 JUN	1345.3	2.4	34260	33721		
1968 050H		3291	US	13 JUN	1348.7	2.3	34345	33772		
1968 050J		3292	US	13 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1968 055A	EXPLORER 38	3307	US	4 JUL	224.2	120.8	5872	5827		
1968 055B		3315	US	4 JUL	156.6	120.5	5933	564		
1968 055C		3848	US	4 JUL	224.1	120.8	5866	5822		
1968 055D		4841	US	4 JUL	156.3	120.7	5931	544		
1968 063A		3334	US	6 AUG	CURRENT ELEMENTS NOT MAINTAINED					
1968 066A	EXPLORER 39	3337	US	8 AUG	114.3	80.6	2166	689		
1968 066B	EXPLORER 40	3338	US	8 AUG	118.2	80.6	2525	682		
1968 066C		3341	US	8 AUG	118.2	80.6	2523	685		
1968 066D		3342	US	8 AUG	117.3	80.6	2444	682		
1968 066E		3343	US	8 AUG	117.6	80.6	2479	673		
1968 066F		3390	US	8 AUG	117.4	80.6	2441	696		
1968 066G		3391	US	8 AUG	117.5	80.6	2466	677		
1968 066H		3392	US	8 AUG	117.5	80.7	2439	705		
1968 066J		3393	US	8 AUG	117.3	80.6	2442	681		
1968 069A	ESSA 7	3345	US	16 AUG	114.9	102.0	1474	1433		
1968 069B		3346	US	16 AUG	114.8	101.9	1468	1430		
1968 069C		3416	US	16 AUG	113.7	101.6	1490	1304		
1968 069D		3417	US	16 AUG	116.1	102.0	1562	1459		
1968 069E		3974	US	16 AUG	114.9	102.0	1481	1426		
1968 069F		3975	US	16 AUG	114.9	102.0	1487	1419		
1968 069G		4499	US	16 AUG	115.1	102.1	1484	1440		
1968 070A	COSMOS 236	3347	USSR	27 AUG	96.5	56.0	606	576		
1968 070B		3349	USSR	27 AUG	96.2	56.0	601	552		
1968 081A	OV2-5	3428	US	26 SEP	CURRENT ELEMENTS NOT MAINTAINED					
1968 081B	ERS 28	3429	US	26 SEP	CURRENT ELEMENTS NOT MAINTAINED					
1968 081C	ERS 21	3430	US	26 SEP	CURRENT ELEMENTS NOT MAINTAINED					
1968 081D	LES 6	3431	US	26 SEP	CURRENT ELEMENTS NOT MAINTAINED					
1968 081E		3432	US	26 SEP	CURRENT ELEMENTS NOT MAINTAINED					

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1968 LAUNCHES (CONT'D)										
1968 090A	COSMOS 248	3503	USSR	19 OCT	93.5	62.2	478	422		
1968 091A	COSMOS 249	3504	USSR	20 OCT	112.0	62.3	2123	517		
1968 091B - 091CK			USSR	20 OCT	SEE NOTE	10*				10*
1968 092A		3510	US	23 OCT	101.3	98.6	848	799		
1968 092B		3522	US	23 OCT	101.3	98.5	848	798		
1968 095A	COSMOS 250	3526	USSR	30 OCT	92.0	73.9	379	375		
1968 095B		3527	USSR	30 OCT	93.0	74.0	427	421		
1968 097A	COSMOS 252	3530	USSR	1 NOV	112.3	62.3	2120	553		
1968 097B - 097DU			USSR	1 NOV	SEE NOTE	11*				11*
1968 100A	PIONEER 9	3533	US	8 NOV	HELIOCENTRIC ORBIT					
1968 100B	TETR 2	3534	US	8 NOV	94.8	32.8	665	351		
1968 100D		3547	US	8 NOV	92.8	32.8	493	326		
1968 106A	COSMOS 256	3576	USSR	30 NOV	109.3	74.0	1225	1174		
1968 106B		3577	USSR	30 NOV	109.2	74.0	1220	1168		
1968 110A	OAO-A2	3597	US	7 DEC	100.2	34.9	774	763		
1968 110B		3598	US	7 DEC	100.1	34.9	808	717		
1968 112B		3605	US	12 DEC	114.4	80.3	1472	1387		
1968 112C		3617	US	12 DEC	114.0	80.1	1452	1377		
1968 112D		3618	US	12 DEC	114.7	80.5	1511	1380		
1968 112E		3840	US	12 DEC	114.5	80.6	1459	1408		
1968 114A	ESSA 8	3615	US	15 DEC	114.6	101.4	1466	1415		
1968 114B		3616	US	15 DEC	115.1	101.5	1473	1449		
1968 114C		3811	US	15 DEC	112.8	101.9	1468	1252		
1968 114D		3812	US	15 DEC	115.3	101.8	1576	1462		
1968 116A	INTELSAT 3 F-2	3623	ITSO	19 DEC	1435.9	6.4	35824	35740		
1968 118B		3627	US	21 DEC	HELIOCENTRIC ORBIT					
1969 LAUNCHES										
1969 006A	OSO 5	3663	US	22 JAN	95.2	32.9	539	518		
1969 006B		3664	US	22 JAN	94.4	32.9	499	483		
1969 009A	ISIS 1	3669	CANADA	30 JAN	128.2	88.4	3516	579	136.080,136.410, 136.590,137.950, 401.750	5* 5* 5*
1969 009B		3670	US	30 JAN	128.0	88.4	3493	580		
1969 010B		3673	US	5 FEB	114.1	80.3	1437	1396		
1969 010C		3841	US	5 FEB	113.7	80.1	1427	1374		
1969 011A	INTELSAT 3 F-3	3674	ITSO	6 FEB	1436.5	4.7	35797	35792		
1969 011B		5977	US	6 FEB	517.9	26.6	29579	386		
1969 013A		3691	US	9 FEB	1435.9	1.0	35803	35765		
1969 013B		3692	US	9 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1969 014A	MARINER 6	3759	US	25 FEB	HELIOCENTRIC ORBIT					
1969 014B		3760	US	25 FEB	HELIOCENTRIC ORBIT					
1969 016A	ESSA 9	3764	US	26 FEB	115.2	102.1	1506	1427		
1969 016B		3767	US	26 FEB	115.1	102.1	1502	1424		
1969 018B		3770	US	3 MAR	HELIOCENTRIC ORBIT					
1969 018C	LM/ASCENT	3771	US	3 MAR	132.6	28.9	4251	221		
1969 021A	COSMOS 269	3775	USSR	5 MAR	93.1	74.0	433	425		
1969 021B		3776	USSR	5 MAR	93.0	74.1	430	423		
1969 021T		3844	USSR	5 MAR	95.2	74.1	542	519		
1969 024A	COSMOS 272	3818	USSR	17 MAR	109.3	73.9	1209	1182		
1969 024B		3819	USSR	17 MAR	109.2	73.9	1199	1182		
1969 024C		6289	USSR	17 MAR	109.1	73.9	1196	1183		
1969 025C	OV1-19	3825	US	18 MAR	153.2	104.7	5744	470		
1969 025E		3827	US	18 MAR	152.8	104.7	5709	477		
1969 025F		3828	US	18 MAR	93.2	98.8	466	407		
1969 029A	METEOR	3835	USSR	26 MAR	97.7	81.1	672	628		
1969 029B - 029AP			USSR	26 MAR	SEE NOTE	12*				12*
1969 030A	MARINER 7	3837	US	27 MAR	HELIOCENTRIC ORBIT					
1969 030B		3845	US	27 MAR	HELIOCENTRIC ORBIT					
1969 036A		3889	US	13 APR	CURRENT ELEMENTS NOT MAINTAINED					
1969 037A	NIMBUS 3	3890	US	14 APR	107.3	99.6	1134	1075		
1969 037B	EGRS 13	3891	US	14 APR	107.2	99.6	1132	1072		
1969 037C		3892	US	14 APR	107.4	99.6	1138	1080		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1969 LAUNCHES (CONT'D)										
1969 043B		3943	US	18 MAY	HELIOCENTRIC ORBIT					
1969 043C	LM/DESCENT	3948	US	18 MAY	SELENOCENTRIC ORBIT					
1969 043D	LM/ASCENT	3949	US	18 MAY	HELIOCENTRIC ORBIT					
1969 045A	INTELSAT 3 F-4	3947	ITSO	22 MAY	1435.6	6.0	35803	35750		
1969 046A	OV5-5/ERS-29	3950	US	23 MAY	CURRENT ELEMENTS NOT MAINTAINED					
1969 046B	OV5-6	3951	US	23 MAY	CURRENT ELEMENTS NOT MAINTAINED					
1969 046C	OV5-9	3952	US	23 MAY	3114.9	32.9	113065	15483		
1969 046D		3954	US	23 MAY	6698.8	45.6	115765	106906		
1969 046E		3955	US	23 MAY	6698.2	45.6	116750	105907		
1969 046F		3956	US	23 MAY	CURRENT ELEMENTS NOT MAINTAINED					
1969 051A	OGO 6	3986	US	5 JUN	96.6	81.9	820	383		
1969 051B		3987	US	5 JUN	97.1	81.9	852	398		
1969 053B		3993	US	21 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1969 059B		4040	US	16 JUL	HELIOCENTRIC ORBIT					
1969 059C	LUNAR MODULE	4041	US	16 JUL	SELENOCENTRIC ORBIT					13*
1969 062A		4047	US	23 JUL	101.2	98.4	856	784		
1969 062B		4048	US	23 JUL	101.2	98.4	856	784		
1969 064A	INTELSAT 3 F-5	4051	ITSO	26 JUL	132.6	30.3	4203	266		
1969 064C		4053	US	26 JUL	141.3	30.3	4951	267		
1969 068A	OSO 6	4065	US	9 AUG	94.3	32.9	506	465		
1969 069A	ATS 5	4068	US	12 AUG	1435.1	4.0	35793	35739	136.470.137.350	5*
1969 069B		4069	US	12 AUG	703.3	17.6	37296	2341		
1969 069C		5991	US	12 AUG	679.8	17.2	37063	1401		
1969 070A	COSMOS 292	4070	USSR	13 AUG	99.8	74.0	762	743		
1969 070B		4071	USSR	13 AUG	99.7	74.0	760	732		
1969 070C		4084	USSR	13 AUG	100.0	74.0	778	741		
1969 082B		4256	US	30 SEP	103.4	70.0	935	907		
1969 082C		4257	US	30 SEP	103.4	70.0	936	908		
1969 082D		4259	US	30 SEP	103.4	70.0	936	908		
1969 082E		4237	US	30 SEP	103.4	70.0	936	908		
1969 082F		4247	US	30 SEP	103.4	70.0	936	908		
1969 082G		4295	US	30 SEP	103.4	70.0	936	908		
1969 082H		4168	US	30 SEP	103.4	70.0	936	908		
1969 082J		4166	US	30 SEP	103.2	70.0	924	898		
1969 082K		4132	US	30 SEP	103.3	70.0	931	902		
1969 082L - 082KK			US	30 SEP	SEE NOTE 14*					14*
1969 084A	METEOR	4119	USSR	6 OCT	97.4	81.2	664	612		
1969 084B		4120	USSR	6 OCT	97.5	81.2	744	543		
1969 091A	COSMOS 304	4138	USSR	21 OCT	99.8	74.0	760	740		
1969 091B		4139	USSR	21 OCT	99.6	74.0	746	737		
1969 097A	GRS-A/AZUR	4221	FRG	8 NOV	120.2	102.6	3003	386		
1969 097B		4222	US	8 NOV	119.0	102.8	2891	384		
1969 097C		4242	FRG	8 NOV	114.7	102.7	2512	381		
1969 097D		4243	FRG	8 NOV	114.4	103.0	2482	380		
1969 097E		4261	FRG	8 NOV	112.5	103.6	2300	385		
1969 097F		4265	FRG	8 NOV	108.2	102.2	1926	367		
1969 099B		4226	US	14 NOV	CURRENT ELEMENTS NOT MAINTAINED					
1969 101A	SKYNET A	4250	UK	22 NOV	1436.0	3.8	35820	35749		
1969 101B		4251	US	22 NOV	CURRENT ELEMENTS NOT MAINTAINED					
1969 103A	COSMOS 312	4254	USSR	24 NOV	108.5	74.0	1178	1142		
1969 103B		4255	USSR	24 NOV	108.3	74.0	1161	1144		
1969 107A	COSMOS 315	4273	USSR	20 DEC	93.7	74.0	465	453		
1969 107B		4274	USSR	20 DEC	93.6	74.0	462	445		
1970 LAUNCHES										
1970 003A	INTELSAT 3 F-6	4297	ITSO	15 JAN	1435.7	5.1	35852	35707		
1970 003B		4298	US	15 JAN	608.2	28.0	34520	280		
1970 008A	ITOS 1	4320	US	23 JAN	115.0	102.0	1481	1436		
1970 008B	OSCAR 5	4321	AUSTRL	23 JAN	115.0	102.0	1479	1435		
1970 008C		4322	US	23 JAN	115.0	102.0	1480	1436		
1970 009A	SERT 2	4327	US	4 FEB	106.1	99.2	1052	1043	136.230.136.920	5*
1970 011A	OHSUMI	4330	JAPAN	11 FEB	139.3	31.0	4716	334		
1970 012A		4331	US	11 FEB	101.2	98.7	870	771		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ. (MHZ)	NOTES
1970 LAUNCHES (CONT'D)										
1970 012B		4332	US	11 FEB	101.2	98.8	871	771		
1970 017A	DIAL-WIKA	4344	FRG	10 MAR	96.2	5.4	865	289		
1970 019A	METEOR	4349	USSR	17 MAR	95.8	81.1	604	519		
1970 019B		4350	USSR	17 MAR	95.9	81.1	677	457		
1970 021A	NATO 1	4353	NATO	20 MAR	1436.1	3.0	35823	35750		
1970 021B		4354	US	20 MAR	625.1	25.2	35378	348		
1970 021C		5975	US	20 MAR	637.9	25.3	36042	294		
1970 024A	COSMOS 330	4360	USSR	7 APR	94.0	74.0	478	465		
1970 024B		4361	USSR	7 APR	94.1	74.0	493	462		
1970 025A	NIMBUS 4	4362	US	8 APR	107.1	99.7	1102	1092	136.500,136.950, 401.500,1702.500	5* 5*
1970 025B	TOPO 1	4363	US	8 APR	106.9	99.8	1091	1086		
1970 025C - 025NN			US	8 APR	SEE NOTE	15*				15*
1970 027A		4366	US	8 APR	6700.5	43.4	112376	110334		
1970 027B		4368	US	8 APR	6694.5	43.3	112806	109764		
1970 028A	COSMOS 332	4369	USSR	11 APR	99.9	74.0	760	751		
1970 028B		4370	USSR	11 APR	99.8	74.0	763	737		
1970 032A	INTELSAT 3 F-7	4376	ITSO	23 APR	CURRENT ELEMENTS NOT MAINTAINED					
1970 032B		4377	US	23 APR	CURRENT ELEMENTS NOT MAINTAINED					
1970 034A		4382	PRC	24 APR	113.7	68.4	2360	438		
1970 034B		4392	PRC	24 APR	112.4	68.4	2244	438		
1970 034C		4400	PRC	24 APR	110.4	68.5	2068	423		
1970 036A	COSMOS 336	4383	USSR	25 APR	115.4	74.0	1487	1465		
1970 036B	COSMOS 337	4384	USSR	25 APR	116.2	74.0	1554	1469		
1970 036C	COSMOS 338	4385	USSR	25 APR	115.8	74.0	1520	1469		
1970 036D	COSMOS 339	4386	USSR	25 APR	115.0	74.0	1471	1447		
1970 036E	COSMOS 340	4387	USSR	25 APR	114.6	74.0	1471	1409		
1970 036F	COSMOS 341	4388	USSR	25 APR	113.9	74.0	1471	1344		
1970 036G	COSMOS 342	4389	USSR	25 APR	113.5	74.0	1470	1312		
1970 036H	COSMOS 343	4390	USSR	25 APR	114.2	74.0	1470	1376		
1970 036J		4391	USSR	25 APR	116.6	74.0	1590	1469		
1970 037A	METEOR	4393	USSR	28 APR	97.9	81.2	702	620		
1970 037B		4394	USSR	28 APR	98.1	81.2	774	568		
1970 037C		5055	USSR	28 APR	96.7	81.2	627	576		
1970 046A		4418	US	19 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1970 046B		4511	US	19 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1970 047A	METEOR	4419	USSR	23 JUN	102.0	81.2	890	826		
1970 047B		4420	USSR	23 JUN	102.2	81.2	923	810		
1970 055A	INTELSAT 3 F-8	4478	ITSO	23 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1970 055B		4486	US	23 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1970 062A	SKYNET B	4493	UK	19 AUG	CURRENT ELEMENTS NOT MAINTAINED					
1970 064A	COSMOS 358	4497	USSR	20 AUG	94.9	74.0	524	509		
1970 064B		4498	USSR	20 AUG	93.9	74.0	485	454		
1970 067A	NNSS O-19	4507	US	27 AUG	106.9	90.1	1221	953		
1970 067B		4515	US	27 AUG	106.9	90.1	1221	954		
1970 067C		5036	US	27 AUG	104.4	90.0	994	942		
1970 067D		5447	US	27 AUG	109.6	90.1	1466	954		
1970 067E		6372	US	27 AUG	106.1	90.0	1132	965		
1970 069A		4510	US	1 SEP	CURRENT ELEMENTS NOT MAINTAINED					
1970 070A		4512	US	3 SEP	101.1	98.8	870	762		
1970 070B		4513	US	3 SEP	101.1	98.9	871	761		
1970 079A	COSMOS 367	4564	USSR	3 OCT	104.5	65.2	1011	934		
1970 083A	COSMOS 371	4578	USSR	12 OCT	99.8	74.0	753	750		
1970 083B		4579	USSR	12 OCT	99.7	74.0	756	738		
1970 085A	METEOR	4583	USSR	15 OCT	97.3	81.2	640	621		
1970 085B		4584	USSR	15 OCT	97.4	81.2	724	549		
1970 085C		6330	USSR	15 OCT	97.3	81.2	721	548		
1970 086A	COSMOS 372	4588	USSR	16 OCT	100.7	74.0	804	784		
1970 086B		4589	USSR	16 OCT	100.6	74.0	806	772		
1970 086C		5357	USSR	16 OCT	100.6	74.0	799	782		
1970 086D		5358	USSR	16 OCT	100.9	74.0	811	800		
1970 087A	COSMOS 373	4590	USSR	20 OCT	93.8	62.9	480	444		
1970 089A	COSMOS 374	4594	USSR	23 OCT	111.6	62.9	2009	596		
1970 089B - 089CU			USSR	23 OCT	SEE NOTE	16*				16*

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1970 LAUNCHES (CONT'D)										
1970 091A	COSMOS 375	4598	USSR	30 OCT	111.7	62.8	2048	570		
1970 091B - 091AQ			USSR	30 OCT	SEE NOTE	17*				17*
1970 093A		4630	US	6 NOV	CURRENT ELEMENTS NOT MAINTAINED					
1970 093B		4632	US	6 NOV	CURRENT ELEMENTS NOT MAINTAINED					
1970 098B		4722	US	18 NOV	91.2	83.1	339	338		
1970 099A	COSMOS 379	4760	USSR	24 NOV	186.9	51.7	8724	180		
1970 102A	COSMOS 381	4783	USSR	2 DEC	104.8	74.0	1012	967		
1970 102B		4784	USSR	2 DEC	104.7	74.0	1006	964		
1970 102C		4840	USSR	2 DEC	104.4	74.0	990	952		
1970 102D		5225	USSR	2 DEC	104.6	74.0	992	962		
1970 102E		8764	USSR	2 DEC	104.5	74.0	994	958		
1970 102F		9794	USSR	2 DEC	104.7	74.0	1002	964		
1970 103A	COSMOS 382	4786	USSR	2 DEC	171.0	55.8	5187	2467		
1970 103B		4789	USSR	2 DEC	158.8	51.5	5084	1587		
1970 103C		4790	USSR	2 DEC	159.1	51.5	5085	1612		
1970 103D		5316	USSR	2 DEC	164.4	56.0	4169	2961		
1970 106A	NOAA 1	4793	US	11 DEC	114.8	102.0	1475	1426		
1970 106B		4794	US	11 DEC	114.8	102.0	1477	1423		
1970 106C		8828	US	11 DEC	116.5	101.7	1549	1507		
1970 107A	EXPLORER 42	4797	US	12 DEC	94.4	3.0	502	478		
1970 107B		4798	US	12 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1970 108A	COSMOS 385	4799	USSR	12 DEC	104.7	74.0	984	978		
1970 108B		4800	USSR	12 DEC	104.6	74.0	983	970		
1970 109A	PEOLE	4801	FRANCE	12 DEC	96.6	15.0	690	495		
1970 109B		4802	FRANCE	12 DEC	98.5	15.0	743	631		
1970 109C		4803	FRANCE	12 DEC	96.6	15.0	690	495		
1970 109D		4839	FRANCE	12 DEC	95.8	14.9	634	474		
1970 109E		5264	FRANCE	12 DEC	95.8	15.0	640	476		
1970 111A	COSMOS 387	4806	USSR	16 DEC	94.6	73.9	504	496		
1970 111B		4807	USSR	16 DEC	94.4	74.0	506	484		
1970 113A	COSMOS 389	4813	USSR	18 DEC	97.9	81.1	682	638		
1970 113B		4814	USSR	18 DEC	97.9	81.1	724	599		
1971 LAUNCHES										
1971 000A		4924	US	UNKN	275.4	18.0	14920	367		18*
1971 000B		4925	US	UNKN	277.4	19.8	15173	245		18*
1971 000C		4926	US	UNKN	308.3	19.8	17215	262		18*
1971 000E		5310	US	UNKN	1435.7	4.8	35795	35763		18*
1971 003A	METEOR	4849	USSR	20 JAN	97.4	81.2	651	624		
1971 003B		4850	USSR	20 JAN	97.6	81.2	727	563		
1971 006A	INTELSAT 4 F-2	4881	ITSO	26 JAN	1436.0	0.1	35799	35771		
1971 006B		4882	US	26 JAN	654.4	28.0	36511	669		
1971 009A	NATO 2	4902	NATO	3 FEB	1436.1	2.3	35804	35769		
1971 009B		4903	US	3 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1971 009D		5986	US	3 FEB	578.0	26.3	31851	1257		
1971 010A	COSMOS 394	4922	USSR	9 FEB	96.4	65.8	603	577		
1971 010B		4923	USSR	9 FEB	96.2	65.8	597	559		
1971 010C		4927	USSR	9 FEB	96.1	65.8	584	565		
1971 011A	TANSEI	4952	JAPAN	16 FEB	106.0	29.6	1103	983		
1971 011B		5126	JAPAN	16 FEB	104.7	29.6	992	973		
1971 011C		5419	JAPAN	16 FEB	100.3	30.4	1023	523		
1971 012A		4953	US	17 FEB	100.8	98.5	830	767		
1971 012B		4954	US	17 FEB	100.8	98.4	831	771		
1971 012C		4957	US	17 FEB	100.5	98.5	820	756		
1971 012D		4958	US	17 FEB	100.5	98.5	819	753		
1971 012E		4963	US	17 FEB	100.6	98.5	819	764		
1971 013A	COSMOS 395	4955	USSR	17 FEB	94.8	74.0	521	499		
1971 013B		4956	USSR	17 FEB	94.7	74.0	522	496		
1971 015A	COSMOS 397	4964	USSR	25 FEB	113.4	65.7	2208	565		
1971 015B - 015CL			USSR	25 FEB	SEE NOTE	19*				19*
1971 016A	COSMOS 398	4966	USSR	26 FEB	134.9	51.6	9307	208		
1971 018A		5007	PRC	3 MAR	98.9	69.8	1167	254		
1971 019C		5045	US	13 MAR	CURRENT ELEMENTS NOT MAINTAINED					

INTER-NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI-NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ. (MHZ)	NOTES
1971 LAUNCHES (CONT'D)										
1971 020A	COSMOS 400	5050	USSR	18 MAR	104.9	65.8	1005	982		
1971 020B		5051	USSR	18 MAR	104.8	65.8	991	986		
1971 020C		5052	USSR	18 MAR	105.0	65.8	1006	984		
1971 021A		5053	US	21 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1971 021B		5054	US	21 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1971 024A	ISIS 2	5104	CANADA	1 APR	113.6	88.1	1428	1358	136.080,136.410, 136.590,137.950, 401.750	5* 5* 5*
1971 024B		5106	US	1 APR	113.5	88.1	1426	1355		
1971 024C		5360	US	1 APR	113.6	88.2	1428	1359		
1971 025A	COSMOS 402	5105	USSR	1 APR	104.9	64.9	1035	948		
1971 028A	COSMOS 405	5117	USSR	7 APR	98.2	81.2	677	671		
1971 028B		5118	USSR	7 APR	98.3	81.2	744	613		
1971 028D		5724	USSR	7 APR	98.2	81.2	676	671		
1971 030A	TOURNESOL	5128	FRANCE	15 APR	95.4	46.3	631	445		
1971 030B		5135	FRANCE	15 APR	95.0	46.3	608	430		
1971 030D		5140	FRANCE	15 APR	91.7	46.3	372	347		
1971 031A	METEOR	5142	USSR	17 APR	96.9	81.2	628	601		
1971 031B		5143	USSR	17 APR	97.1	81.2	703	548		
1971 035A	COSMOS 407	5174	USSR	23 APR	100.9	74.0	817	789		
1971 035B		5175	USSR	23 APR	100.8	74.0	822	774		
1971 035C		5300	USSR	23 APR	101.2	74.0	832	807		
1971 035D		5301	USSR	23 APR	101.3	74.0	839	807		
1971 035E		5778	USSR	23 APR	101.2	74.0	833	805		
1971 035F		5858	USSR	23 APR	101.1	74.0	827	804		
1971 035G		9569	USSR	23 APR	101.1	74.0	831	796		
1971 038A	COSMOS 409	5180	USSR	28 APR	109.3	74.0	1213	1178		
1971 038B		5181	USSR	28 APR	109.1	73.9	1209	1171		
1971 039A		5204	US	5 MAY	CURRENT ELEMENTS NOT MAINTAINED					
1971 039B		5205	US	5 MAY	CURRENT ELEMENTS NOT MAINTAINED					
1971 041A	COSMOS 411	5210	USSR	7 MAY	113.8	74.0	1492	1317		
1971 041B	COSMOS 412	5211	USSR	7 MAY	116.1	74.0	1537	1481		
1971 041C	COSMOS 413	5212	USSR	7 MAY	115.7	74.0	1509	1475		
1971 041D	COSMOS 414	5213	USSR	7 MAY	115.1	74.0	1495	1428		
1971 041E	COSMOS 415	5214	USSR	7 MAY	115.4	74.0	1502	1452		
1971 041F	COSMOS 416	5215	USSR	7 MAY	114.4	74.0	1493	1373		
1971 041G	COSMOS 417	5216	USSR	7 MAY	114.1	74.0	1494	1345		
1971 041H	COSMOS 418	5217	USSR	7 MAY	114.8	74.0	1494	1401		
1971 041J		5218	USSR	7 MAY	116.8	74.0	1593	1490		
1971 045A	MARS 2	5234	USSR	19 MAY	AREOCENTRIC ORBIT					
1971 046A	COSMOS 422	5238	USSR	22 MAY	105.0	74.0	1010	986		
1971 046B		5239	USSR	22 MAY	104.9	74.0	1001	985		
1971 049A	MARS 3	5252	USSR	28 MAY	AREOCENTRIC ORBIT					
1971 050A	COSMOS 425	5253	USSR	29 MAY	94.5	74.0	514	486		
1971 050B		5254	USSR	29 MAY	94.5	74.0	521	470		
1971 051A	MARINER 9	5261	US	30 MAY	AREOCENTRIC ORBIT					
1971 051B		5267	US	30 MAY	HELIOCENTRIC ORBIT					
1971 052A	COSMOS 426	5281	USSR	4 JUN	108.4	74.0	1929	385		
1971 052B		5282	USSR	4 JUN	108.4	74.0	1924	385		
1971 052F		5956	USSR	4 JUN	96.6	73.9	843	350		
1971 054A		5285	US	8 JUN	95.6	90.1	563	536		
1971 058A	EXPLORER 44	5317	US	8 JUL	94.5	51.0	572	423		
1971 059A	METEOR	5327	USSR	16 JUL	97.1	81.1	637	608		
1971 059B		5328	USSR	16 JUL	97.3	81.2	714	554		
1971 060A		5329	US	16 JUL	93.1	74.9	434	428		
1971 063D	APOLLO 15 SUBSATELLITE	5377	US	26 JUL	SELENOCENTRIC ORBIT					
1971 064A	MOLNIYA 1	5367	USSR	28 JUL	715.2	64.9	40108	173		
1971 064D		5368	USSR	28 JUL	699.4	64.9	39265	181		
1971 067B	OV1-21	5397	US	7 AUG	101.9	87.6	918	786		
1971 067E		5398	US	7 AUG	101.9	87.6	915	787		
1971 067G		5401	US	7 AUG	100.4	87.6	829	732		
1971 067H		5406	US	7 AUG	100.9	87.6	857	748		
1971 067J		5405	US	7 AUG	101.6	87.6	907	768		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1971 LAUNCHES (CONT'D)										
1971 067K		5395	US	7 AUG	101.9	87.6	916	788		
1971 067L		5399	US	7 AUG	101.7	87.6	909	779		
1971 067M		5400	US	7 AUG	101.7	87.6	907	778		
1971 067N		5384	US	7 AUG	101.8	87.6	915	778		
1971 067P		5410	US	7 AUG	101.5	87.6	893	769		
1971 069A	COSMOS 434	5407	USSR	12 AUG	170.2	51.6	7420	170		
1971 071A	EOLE 1	5435	FRANCE	16 AUG	100.6	50.1	903	674		
1971 071B		5438	US	16 AUG	100.6	50.1	901	673		
1971 071C		5440	US	16 AUG	100.1	50.7	887	642		
1971 071D		5426	US	16 AUG	101.0	49.5	920	697		
1971 073B		5449	USSR	2 SEP	SELENOCENTRIC ORBIT					
1971 074A	COSMOS 436	5461	USSR	7 SEP	94.5	74.0	508	489		
1971 074B		5462	USSR	7 SEP	94.4	74.0	506	477		
1971 075A	COSMOS 437	5466	USSR	10 SEP	94.7	74.0	521	495		
1971 075B		5467	USSR	10 SEP	94.7	74.0	539	471		
1971 080A	SHINSEI	5485	JAPAN	28 SEP	113.0	32.0	1865	868		
1971 080B		5498	JAPAN	28 SEP	111.8	32.0	1756	866		
1971 082A	LUNA 19	5488	USSR	28 SEP	SELENOCENTRIC ORBIT					
1971 082C		5490	USSR	28 SEP	SELENOCENTRIC ORBIT					
1971 083B	TETR 4	5492	US	29 SEP	92.7	33.0	449	360		
1971 086A	COSMOS 444	5547	USSR	13 OCT	114.1	74.0	1510	1323		
1971 086B	COSMOS 445	5548	USSR	13 OCT	114.4	74.0	1513	1352		
1971 086C	COSMOS 446	5549	USSR	13 OCT	114.8	74.0	1513	1383		
1971 086D	COSMOS 447	5550	USSR	13 OCT	115.1	74.0	1516	1412		
1971 086E	COSMOS 448	5551	USSR	13 OCT	115.5	74.0	1518	1442		
1971 086F	COSMOS 449	5552	USSR	13 OCT	116.2	74.0	1543	1484		
1971 086G	COSMOS 450	5553	USSR	13 OCT	115.9	74.0	1531	1463		
1971 086H	COSMOS 451	5554	USSR	13 OCT	116.6	74.0	1574	1491		
1971 086J		5555	USSR	13 OCT	117.4	74.0	1625	1505		
1971 087A		5557	US	14 OCT	101.5	99.0	877	793		
1971 087B		5556	US	14 OCT	101.6	99.0	886	793		
1971 089A		5560	US	17 OCT	100.5	92.7	799	772		
1971 091D		5576	US	21 OCT	105.3	103.4	1393	628		
1971 093A	PROSPERO	5580	UK	28 OCT	106.3	82.0	1574	544		
1971 093B		5581	UK	28 OCT	106.4	82.0	1583	544		
1971 093C		5582	UK	28 OCT	104.3	82.1	1390	537		
1971 095A		5587	US	3 NOV	1436.0	1.9	35798	35773		
1971 095B		5588	US	3 NOV	1441.8	2.3	35913	35886		
1971 095C		5589	US	3 NOV	CURRENT ELEMENTS NOT MAINTAINED					
1971 096A	EXPLORER 45	5598	US	15 NOV	395.5	3.7	22655	283		
1971 096B		5973	US	15 NOV	354.0	3.6	20161	232		
1971 099A	COSMOS 457	5614	USSR	20 NOV	109.4	74.0	1220	1184		
1971 099B		5615	USSR	20 NOV	109.3	74.0	1214	1179		
1971 103A	COSMOS 460	5628	USSR	30 NOV	94.6	73.9	509	500		
1971 103B		5629	USSR	30 NOV	94.6	74.0	522	487		
1971 105A	COSMOS 461	5643	USSR	2 DEC	93.5	69.2	456	446		
1971 105B		5644	USSR	2 DEC	93.6	69.2	464	441		
1971 109A	ARIEL 4	5675	UK	11 DEC	94.0	82.9	510	436		
1971 109B		5676	US	11 DEC	93.6	82.9	489	424		
1971 110A		5678	US	14 DEC	104.9	69.9	997	984		
1971 110B		5679	US	14 DEC	104.1	69.9	965	944		
1971 110C		5680	US	14 DEC	104.9	69.9	996	984		
1971 110D		5681	US	14 DEC	104.8	69.9	997	983		
1971 110E		5682	US	14 DEC	104.8	69.9	997	983		
1971 111A	COSMOS 465	5683	USSR	15 DEC	104.8	74.0	1010	970		
1971 111B		5685	USSR	15 DEC	104.7	74.0	1002	966		
1971 114A	COSMOS 468	5705	USSR	17 DEC	100.7	74.0	808	784		
1971 114B		5707	USSR	17 DEC	100.7	74.0	812	775		
1971 114C		8756	USSR	17 DEC	101.1	74.0	821	810		
1971 114D		8757	USSR	17 DEC	101.0	74.0	816	805		
1971 114E		9704	USSR	17 DEC	101.1	74.0	817	807		
1971 115B		5713	USSR	19 DEC	252.8	64.9	13615	121		
1971 116A	INTELSAT 4 F-3	5709	ITSO	20 DEC	1436.2	0.0	35797	35779		
1971 117A	COSMOS 469	5721	USSR	25 DEC	104.7	64.4	1029	933		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ. (MHZ)	NOTES
1971 LAUNCHES (CONT'D)										
1971 119A	OREOL 1	5729	USSR	27 DEC	114.1	74.0	2436	399		
1971 119B		5730	USSR	27 DEC	113.9	73.9	2416	400		
1971 119C		5962	USSR	27 DEC	94.3	73.9	510	470		
1971 119E		6190	USSR	27 DEC	93.4	74.1	458	429		
1971 120A	METEOR	5731	USSR	29 DEC	102.6	81.2	928	843		
1971 120B		5732	USSR	29 DEC	102.2	81.2	872	858		
1971 120C		8826	USSR	29 DEC	102.5	81.2	902	861		
1971 120D		8827	USSR	29 DEC	102.3	81.2	874	866		
1971 120E		9800	USSR	29 DEC	102.6	81.2	900	874		
1972 LAUNCHES										
1972 002D		5772	US	20 JAN	93.9	96.5	497	440		
1972 003A	INTELSAT 4 F-4	5775	ITSO	23 JAN	1436.2	0.2	35800	35780		
1972 003B		5816	US	23 JAN	654.4	28.2	36549	634		
1972 005B		5815	US	31 JAN	94.9	89.7	732	300		
1972 005C		5817	US	31 JAN	CURRENT ELEMENTS NOT MAINTAINED					
1972 007B		5836	USSR	14 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1972 009A	COSMOS 475	5846	USSR	25 FEB	104.7	74.0	1001	967		
1972 009B		5847	USSR	25 FEB	104.5	74.0	998	953		
1972 010A		5851	US	1 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1972 010B		5854	US	1 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1972 011A	COSMOS 476	5852	USSR	1 MAR	97.0	81.2	629	612		
1972 011B		5853	USSR	1 MAR	97.2	81.2	687	564		
1972 012A	PIONEER 10	5860	US	3 MAR	SOLAR SYSTEM ESCAPE TRAJECTORY					
1972 012B		5861	US	3 MAR	HELIOCENTRIC ORBIT					
1972 014A	TD-1A	5879	ESRO	12 MAR	94.9	97.5	526	509		
1972 014B		5880	US	12 MAR	94.9	97.5	521	508		
1972 017A	COSMOS 479	5894	USSR	22 MAR	94.7	74.0	516	498		
1972 017B		5895	USSR	22 MAR	94.6	74.0	525	483		
1972 018A		5903	US	24 MAR	101.7	98.8	884	800		
1972 018B		5904	US	24 MAR	101.6	98.8	874	800		
1972 019A	COSMOS 480	5905	USSR	25 MAR	109.1	82.9	1201	1175		
1972 019B		5907	USSR	25 MAR	109.0	82.9	1197	1166		
1972 022A	METEOR	5917	USSR	30 MAR	102.5	81.2	892	864		
1972 022B		5918	USSR	30 MAR	102.6	81.2	931	840		
1972 023A	COSMOS 482	5919	USSR	31 MAR	150.6	52.1	6615	209		
1972 023D		5923	USSR	31 MAR	189.6	52.1	7338	207		
1972 023E		6073	USSR	31 MAR	193.0	52.1	9151	219		
1972 025B	SRET 1	5928	FRANCE	4 APR	CURRENT ELEMENTS NOT MAINTAINED					
1972 029A	PROGNOZ	5941	USSR	14 APR	CURRENT ELEMENTS NOT MAINTAINED					
1972 031C	LUNAR MODULE	6005	US	16 APR	SELENOCENTRIC ORBIT					13*
1972 036A	COSMOS 489	6019	USSR	6 MAY	104.7	74.0	1004	966		
1972 035B		6020	USSR	6 MAY	104.6	74.0	990	965		
1972 037G		6034	USSR	19 MAY	684.2	64.7	38467	220		
1972 041A	INTELSAT 4 F-5	6052	ITSO	13 JUN	1436.1	0.0	35791	35782		
1972 041B		6058	US	13 JUN	653.6	26.0	36664	477		
1972 043A	COSMOS 494	6059	USSR	23 JUN	100.7	74.0	804	788		
1972 043B		6061	USSR	23 JUN	100.6	74.0	802	777		
1972 043C		6063	USSR	23 JUN	101.1	74.0	822	801		
1972 043D		6065	USSR	23 JUN	101.2	74.0	837	801		
1972 043E		6162	USSR	23 JUN	100.6	74.0	812	767		
1972 046A	PROGNOZ 2	6068	USSR	29 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1972 049A	METEOR	6079	USSR	30 JUN	102.8	81.2	904	886		
1972 049B		6080	USSR	30 JUN	102.9	81.2	937	864		
1972 052C		6096	US	7 JUL	93.1	96.1	431	429		
1972 053A	COSMOS 500	6097	USSR	10 JUL	94.7	74.0	523	493		
1972 053B		6098	USSR	10 JUL	94.6	74.0	526	483		
1972 057A	COSMOS 504	6117	USSR	20 JUL	113.9	74.0	1497	1323		
1972 057B	COSMOS 505	6118	USSR	20 JUL	114.3	74.0	1498	1354		
1972 057C	COSMOS 506	6119	USSR	20 JUL	114.6	74.0	1498	1384		
1972 057D	COSMOS 507	6120	USSR	20 JUL	114.9	74.0	1498	1413		
1972 057F	COSMOS 508	6121	USSR	20 JUL	115.3	74.0	1497	1445		
1972 057F	COSMOS 509	6122	USSR	20 JUL	115.6	74.0	1500	1475		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1972 LAUNCHES (CONT'D)										
1972 057G	COSMOS 510	6123	USSR	20 JUL	116.0	74.0	1511	1496		
1972 057H	COSMOS 511	6124	USSR	20 JUL	116.4	74.0	1547	1496		
1972 057J		6125	USSR	20 JUL	117.0	74.0	1603	1494		
1972 058A	LANDSAT 1	6126	US	23 JUL	103.2	98.8	917	905	137.860.2229.500,	5*
									2265.500.	5*
									2287.500	5*
1972 058B - 058HW			US	23 JUL	SEE NOTE	20*				20*
1972 061A	EXPLORER 46	6142	US	13 AUG	97.0	37.6	751	480		
1972 061B		6145	US	13 AUG	96.7	37.6	735	470		
1972 061C		6146	US	13 AUG	95.1	37.6	622	425		
1972 062A	COSMOS 514	6148	USSR	16 AUG	104.3	82.9	974	957		
1972 062B		6149	USSR	16 AUG	104.3	82.9	970	956		
1972 062C		6277	USSR	16 AUG	104.1	82.8	963	951		
1972 062D		7560	USSR	16 AUG	103.2	82.9	969	858		
1972 064A	DENPA	6152	JAPAN	19 AUG	133.4	31.0	4307	232		
1972 064B		6332	JAPAN	18 AUG	139.9	30.9	4869	232		
1972 065A	COPERNICUS	6153	US	21 AUG	99.6	35.0	744	733	136.260.136.440.	5*
									400.550	5*
1972 065B		6155	US	21 AUG	99.5	35.0	776	696		
1972 065C		6156	US	21 AUG	99.4	35.0	737	725		
1972 066A	COSMOS 516	6154	USSR	21 AUG	104.5	64.8	1039	910		
1972 069A	TRIAD 01-1X	6173	US	2 SEP	100.6	90.0	839	739		
1972 069B		6180	US	2 SEP	100.6	90.0	838	739		
1972 069C		6250	US	2 SEP	100.1	89.7	832	705		
1972 072A	COSMOS 520	6192	USSR	19 SEP	715.3	65.3	37186	3046		
1972 072E		6302	USSR	19 SEP	706.7	65.2	36796	3012		
1972 073A	EXPLORER 47	6197	US	23 SEP	17420.5	36.0	245862	186590	136.890.137.920	5*
1972 074A	COSMOS 521	6206	USSR	29 SEP	104.9	65.8	1006	979		
1972 074B		6207	USSR	29 SEP	104.8	65.8	991	984		
1972 074C		6210	USSR	29 SEP	104.9	65.8	1009	980		
1972 075A	MOLNIYA 2	6208	USSR	30 SEP	717.4	65.2	39914	423		
1972 075D		6303	USSR	30 SEP	700.5	65.2	39118	382		
1972 076A		6212	US	2 OCT	99.5	98.4	745	729		
1972 076B		6217	US	2 OCT	99.5	98.5	748	730		
1972 076C		6218	US	2 OCT	99.6	98.4	749	730		
1972 076D		6221	US	2 OCT	99.5	98.4	749	729		
1972 076E		6224	US	2 OCT	99.3	98.4	738	717		
1972 079C		6822	US	10 OCT	114.7	95.6	1469	1421		
1972 079D		6823	US	10 OCT	114.8	95.7	1491	1407		
1972 079E		6824	US	10 OCT	114.6	95.5	1449	1436		
1972 081A	MOLNIYA 1	6231	USSR	14 OCT	717.6	64.4	40053	297		
1972 082A	NOAA 2	6235	US	15 OCT	114.9	101.5	1457	1452		
1972 082B	AMSAT-OSCAR 6	6236	US	15 OCT	114.9	101.4	1456	1451		
1972 082C		6237	US	15 OCT	109.3	102.7	1472	919		
1972 085A	METEOR	6256	USSR	26 OCT	102.5	81.2	892	864		
1972 085B		6257	USSR	26 OCT	102.6	81.2	925	841		
1972 087A	COSMOS 528	6262	USSR	1 NOV	114.1	74.0	1469	1367		
1972 087B	COSMOS 529	6264	USSR	1 NOV	114.5	74.0	1470	1403		
1972 087C	COSMOS 530	6265	USSR	1 NOV	113.8	74.0	1470	1334		
1972 087D	COSMOS 531	6266	USSR	1 NOV	114.7	74.0	1471	1422		
1972 087E	COSMOS 532	6267	USSR	1 NOV	113.4	74.0	1469	1301		
1972 087F	COSMOS 533	6268	USSR	1 NOV	113.6	74.0	1470	1318		
1972 087G	COSMOS 534	6269	USSR	1 NOV	113.9	74.0	1470	1350		
1972 087H	COSMOS 535	6270	USSR	1 NOV	114.3	74.0	1470	1385		
1972 087J		6271	USSR	1 NOV	116.6	74.0	1595	1468		
1972 088A	COSMOS 536	6272	USSR	3 NOV	94.9	74.0	537	496		
1972 088B		6273	USSR	3 NOV	94.8	74.0	537	485		
1972 088D		6700	USSR	3 NOV	95.2	74.0	545	517		
1972 089A		6275	US	9 NOV	101.7	98.6	870	812		
1972 089B		6276	US	9 NOV	101.7	98.6	870	815		
1972 090A	ANIK 1	6278	CANADA	10 NOV	1436.0	0.1	35802	35770		
1972 091A	EXPLORER 48	6282	US	15 NOV	94.6	1.9	574	422		
1972 091B		6800	US	15 NOV	94.5	1.9	565	420		
1972 097A	NIMBUS 5	6305	US	11 DEC	107.2	99.8	1105	1093	136.500.1702.500,	5*
									2208.500	5*

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1972 LAUNCHES (CONT'D)										
1972 097B		6306	US	11 DEC	111.8	99.8	1519	1103		
1972 101A		6317	US	20 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1972 101B		6318	US	20 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1972 102A	COSMOS 539	6319	USSR	21 DEC	112.9	74.0	1381	1343		
1972 102B		6320	USSR	21 DEC	112.8	74.0	1375	1338		
1972 104A	COSMOS 540	6323	USSR	25 DEC	100.7	74.0	809	779		
1972 104B		6324	USSR	25 DEC	100.5	74.0	795	772		
1972 104C		6391	USSR	25 DEC	100.8	74.1	810	786		
1972 104D		6396	USSR	25 DEC	100.8	74.0	814	784		
1972 104E		8829	USSR	25 DEC	101.5	74.0	852	813		
1972 106A	COSMOS 542	6328	USSR	28 DEC	96.2	81.2	633	523		
1972 106B		6329	USSR	28 DEC	96.2	81.2	651	508		
1973 LAUNCHES										
1973 003A	COSMOS 544	6343	USSR	20 JAN	94.9	74.0	529	504		
1973 003B		6344	USSR	20 JAN	94.7	74.0	526	492		
1973 005A	COSMOS 546	6350	USSR	26 JAN	96.5	50.6	611	575		
1973 005B		6351	USSR	26 JAN	96.4	50.6	613	559		
1973 007A	MOLNIYA 1	6356	USSR	3 FEB	717.2	64.8	40111	218		
1973 007E		6368	USSR	3 FEB	702.4	64.8	39321	272		
1973 009A	PROGNOZ 3	6364	USSR	15 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1973 010A	COSMOS 549	6373	USSR	28 FEB	94.9	74.0	526	508		
1973 010B		6374	USSR	28 FEB	94.8	74.0	539	487		
1973 013A		6380	US	6 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1973 015A	METEOR	6392	USSR	20 MAR	102.5	81.2	892	871		
1973 015B		6393	USSR	20 MAR	102.7	81.2	932	844		
1973 018A	MOLNIYA 2	6418	USSR	5 APR	717.3	65.4	39280	1052		
1973 018D		6439	USSR	5 APR	699.0	65.4	38417	1010		
1973 019A	PIONEER 11	6421	US	6 APR	SOLAR SYSTEM ESCAPE TRAJECTORY					
1973 019B		6425	US	6 APR	HELIOCENTRIC ORBIT					
1973 023A	ANIK 2	6437	CANADA	20 APR	1436.0	0.0	35797	35775		
1973 027A	SKYLAB 1	6633	US	14 MAY	92.8	50.0	423	406		
1973 034A	METEOR	6659	USSR	29 MAY	102.4	81.2	896	852		
1973 034B		6660	USSR	29 MAY	102.6	81.2	920	850		
1973 037A	COSMOS 564	6675	USSR	8 JUN	114.6	74.0	1482	1396		
1973 037B	COSMOS 565	6676	USSR	8 JUN	115.3	74.0	1491	1450		
1973 037C	COSMOS 566	6677	USSR	8 JUN	115.0	74.0	1484	1434		
1973 037D	COSMOS 567	6678	USSR	8 JUN	114.8	74.0	1485	1414		
1973 037E	COSMOS 568	6679	USSR	8 JUN	114.4	74.0	1483	1376		
1973 037F	COSMOS 569	6680	USSR	8 JUN	114.2	74.0	1482	1358		
1973 037G	COSMOS 570	6681	USSR	8 JUN	114.0	74.0	1482	1339		
1973 037H	COSMOS 571	6682	USSR	8 JUN	113.7	74.0	1481	1321		
1973 037J		6683	USSR	8 JUN	116.9	74.0	1603	1481		
1973 039A	EXPLORER 49	6686	US	10 JUN	222.0	82.3	1227	904	136.860.400.950	5* 21*
1973 039B		6687	US	10 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1973 039D		6689	US	10 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1973 039F		6725	US	10 JUN	SELENOCENTRIC ORBIT					
1973 039G		6726	US	10 JUN	SELENOCENTRIC ORBIT					
1973 040A		6691	US	12 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1973 042A	COSMOS 574	6707	USSR	20 JUN	105.0	82.9	1015	983		
1973 042B		6708	USSR	20 JUN	104.9	82.9	1006	982		
1973 045A	MOLNIYA 2	6722	USSR	11 JUL	717.7	65.1	39726	625		
1973 045D		6741	USSR	11 JUL	702.1	65.2	38934	645		
1973 047A	MARS 4	6742	USSR	21 JUL	HELIOCENTRIC ORBIT					
1973 049A	MARS 5	6754	USSR	25 JUL	AREOCENTRIC ORBIT					
1973 052A	MARS 6	6768	USSR	5 AUG	HELIOCENTRIC ORBIT					
1973 053A	MARS 7	6776	USSR	9 AUG	HELIOCENTRIC ORBIT					
1973 053D	CAPSULE	7224	USSR	9 AUG	HELIOCENTRIC ORBIT					
1973 054A		6787	US	17 AUG	101.4	98.6	852	807		
1973 054B		6788	US	17 AUG	101.4	98.6	851	806		
1973 056A		6791	US	21 AUG	CURRENT ELEMENTS NOT MAINTAINED					
1973 056B		6792	US	21 AUG	CURRENT ELEMENTS NOT MAINTAINED					
1973 058A	INTELSAT 4 F-7	6796	ITSO	23 AUG	1436.3	0.4	35798	35784		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1973 LAUNCHES (CONT'D)										
1973 058B		6797	US	23 AUG	655.1	27.8	36685	530		
1973 060A	COSMOS 582	6802	USSR	28 AUG	95.0	74.0	527	515		
1973 060B		6803	USSR	28 AUG	94.9	74.0	530	508		
1973 060C		6804	USSR	28 AUG	94.9	74.0	537	500		
1973 061A	MOLNIYA 1	6805	USSR	30 AUG	717.7	65.5	39215	1136		
1973 061F		6815	USSR	30 AUG	678.1	65.3	37396	984		
1973 064A	COSMOS 585	6825	USSR	8 SEP	113.5	74.0	1405	1377		
1973 064B		6826	USSR	8 SEP	113.4	74.0	1406	1363		
1973 064C		6827	USSR	8 SEP	101.0	74.1	828	794		
1973 065A	COSMOS 586	6828	USSR	14 SEP	104.8	82.9	1006	969		
1973 065B		6829	USSR	14 SEP	104.7	82.9	999	967		
1973 069A	COSMOS 588	6845	USSR	2 OCT	115.3	73.9	1494	1450		
1973 069B	COSMOS 589	6846	USSR	2 OCT	114.9	73.9	1490	1416		
1973 069C	COSMOS 590	6847	USSR	2 OCT	115.1	73.9	1489	1435		
1973 069D	COSMOS 591	6848	USSR	2 OCT	114.1	73.9	1488	1348		
1973 069E	COSMOS 592	6849	USSR	2 OCT	113.9	73.9	1486	1332		
1973 069F	COSMOS 593	6850	USSR	2 OCT	114.3	73.9	1487	1366		
1973 069G	COSMOS 594	6851	USSR	2 OCT	114.5	73.9	1487	1382		
1973 069H	COSMOS 595	6852	USSR	2 OCT	114.7	73.9	1487	1400		
1973 069J		6853	USSR	2 OCT	117.1	74.0	1624	1486		
1973 076A	MOLNIYA 2	6877	USSR	19 OCT	732.5	64.9	40278	802		
1973 076D		6898	USSR	19 OCT	733.0	64.9	40318	786		
1973 078A	EXPLORER 50	6893	US	26 OCT	17245.3	28.2	256627	172836	136.800.137.980	5*
1973 078C		6895	US	26 OCT	111.9	28.8	2267	358		
1973 078D		6896	US	26 OCT	CURRENT ELEMENTS NOT MAINTAINED					
1973 080A	COSMOS 604	6907	USSR	29 OCT	97.1	81.2	634	612		
1973 080B		6908	USSR	29 OCT	97.1	81.2	674	572		
1973 081A	NNSS O-20	6909	US	30 OCT	105.5	90.1	1143	899		
1973 081B		6910	US	30 OCT	105.5	90.1	1144	896		
1973 082A	INTERCOSMOS 10	6911	USSR	30 OCT	91.8	73.9	501	227		
1973 082B		6912	USSR	30 OCT	93.3	73.9	646	229		
1973 084A	COSMOS 606	6916	USSR	2 NOV	716.9	65.4	37914	2396		
1973 084D		6939	USSR	2 NOV	706.5	65.3	37471	2328		
1973 085A	MARINER 10	6919	US	3 NOV	HELIOCENTRIC ORBIT					
1973 086A	NOAA 3	6920	US	6 NOV	116.1	101.8	1513	1502		
1973 086B - 086GD			US	6 NOV	SEE NOTE	22*				22*
1973 088B		6931	US	10 NOV	93.9	96.3	474	459		
1973 088D		6938	US	10 NOV	114.6	96.9	1460	1417		
1973 088E		7559	US	10 NOV	114.7	96.7	1483	1405		
1973 089A	MOLNIYA 1	6932	USSR	14 NOV	717.6	65.1	39302	1047		
1973 089E		6940	USSR	14 NOV	698.5	65.2	38364	1037		
1973 093A	COSMOS 610	6950	USSR	27 NOV	95.0	74.0	537	507		
1973 093B		6951	USSR	27 NOV	94.8	74.0	534	492		
1973 097A	MOLNIYA 1	6958	USSR	30 NOV	717.7	63.6	39845	508		
1973 097D		7178	USSR	30 NOV	734.7	63.6	40660	526		
1973 098A	COSMOS 614	6965	USSR	4 DEC	100.6	74.0	807	769		
1973 098B		6966	USSR	4 DEC	100.5	74.0	805	768		
1973 098C		6967	USSR	4 DEC	100.6	74.0	811	774		
1973 100A		6973	US	13 DEC	1436.2	0.4	35804	35773		
1973 100B		6974	US	13 DEC	1436.1	0.5	35800	35775		
1973 100D		6976	US	13 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1973 101A	EXPLORER 51	6977	US	16 DEC	92.3	67.9	393	387	137.230.2289.500	5*
1973 104A	COSMOS 617	6985	USSR	19 DEC	114.0	74.0	1485	1336		
1973 104B	COSMOS 618	6986	USSR	19 DEC	115.2	74.0	1488	1445		
1973 104C	COSMOS 619	6987	USSR	19 DEC	115.0	74.0	1489	1425		
1973 104D	COSMOS 620	6988	USSR	19 DEC	115.4	74.0	1495	1460		
1973 104E	COSMOS 621	6989	USSR	19 DEC	114.8	74.0	1486	1408		
1973 104F	COSMOS 622	6990	USSR	19 DEC	114.3	74.0	1486	1371		
1973 104G	COSMOS 623	6991	USSR	19 DEC	114.5	74.0	1486	1389		
1973 104H	COSMOS 624	6992	USSR	19 DEC	114.2	74.0	1487	1353		
1973 104J		6993	USSR	19 DEC	117.0	74.0	1623	1477		
1973 106A	MOLNIYA 2	7000	USSR	25 DEC	717.6	63.6	39908	441		
1973 106D		7372	USSR	25 DEC	733.5	63.7	40648	481		
1973 107A	OREOL 2	7003	USSR	26 DEC	108.9	73.9	1953	401		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1973 LAUNCHES (CONT'D)										
1973 107B		7004	USSR	26 DEC	108.7	73.9	1946	395		
1973 108A	COSMOS 626	7005	USSR	27 DEC	104.0	65.4	982	916		
1973 109A	COSMOS 627	7008	USSR	29 DEC	105.0	82.9	1020	972		
1973 109B		7009	USSR	29 DEC	104.7	82.9	997	969		
1974 LAUNCHES										
1974 001A	COSMOS 628	7094	USSR	17 JAN	104.8	82.9	1013	959		
1974 001B		7095	USSR	17 JAN	104.6	82.9	1005	952		
1974 005A	COSMOS 631	7109	USSR	6 FEB	95.1	74.0	546	502		
1974 005B		7110	USSR	6 FEB	94.9	74.0	527	511		
1974 005C		7111	USSR	6 FEB	93.4	74.1	484	403		
1974 005E		7257	USSR	6 FEB	94.2	74.0	503	458		
1974 008A	TANSEI 2	7122	JAPAN	16 FEB	118.4	31.2	2934	281		
1974 008B		7123	JAPAN	16 FEB	118.8	31.2	2979	279		
1974 011A	METEOR	7209	USSR	5 MAR	102.1	81.2	895	831		
1974 011B		7210	USSR	5 MAR	102.1	81.2	922	805		
1974 013A	UK-X4	7213	UK	9 MAR	101.1	97.8	924	701		
1974 013B		7228	US	9 MAR	101.1	97.8	917	712		
1974 013C		7215	UK	9 MAR	100.9	97.2	901	712		
1974 013D		7214	UK	9 MAR	101.2	98.4	934	701		
1974 015A		7218	US	16 MAR	101.4	98.9	876	781		
1974 015B		7219	US	16 MAR	101.5	98.9	885	783		
1974 017A	COSMOS 637	7229	USSR	26 MAR	1429.0	2.2	35884	35411		
1974 020B		7244	US	10 APR	101.0	94.6	827	788		
1974 020C		7247	US	10 APR	94.7	93.9	517	498		
1974 022A	WESTAR 1	7250	US	13 APR	1436.1	0.0	35793	35780		
1974 023A	MOLNIYA 1	7260	USSR	20 APR	717.6	64.8	39546	803		
1974 023E		7264	USSR	20 APR	734.4	64.8	40379	795		
1974 024A	COSMOS 641	7265	USSR	23 APR	114.5	74.0	1483	1389		
1974 024B	COSMOS 642	7266	USSR	23 APR	113.7	74.0	1482	1320		
1974 024C	COSMOS 643	7267	USSR	23 APR	114.1	74.0	1483	1354		
1974 024D	COSMOS 644	7268	USSR	23 APR	113.9	74.0	1484	1336		
1974 024E	COSMOS 645	7269	USSR	23 APR	114.3	74.0	1483	1370		
1974 024F	COSMOS 646	7270	USSR	23 APR	114.7	74.0	1486	1405		
1974 024G	COSMOS 647	7271	USSR	23 APR	114.9	74.0	1485	1424		
1974 024H	COSMOS 648	7272	USSR	23 APR	115.1	74.0	1491	1439		
1974 024J		7273	USSR	23 APR	116.9	74.0	1611	1477		
1974 025A	METEOR	7274	USSR	24 APR	102.5	81.2	896	862		
1974 025B		7275	USSR	24 APR	102.6	81.2	926	840		
1974 026A	MOLNIYA 2	7276	USSR	26 APR	717.6	63.7	38852	1497		
1974 026E		7373	USSR	26 APR	732.6	63.7	39567	1515		
1974 028A	COSMOS 650	7281	USSR	29 APR	113.4	74.0	1402	1369		
1974 028B		7284	USSR	29 APR	113.2	74.0	1395	1362		
1974 029A	COSMOS 651	7291	USSR	15 MAY	103.4	64.9	961	884		
1974 032A	COSMOS 654	7297	USSR	17 MAY	104.4	64.9	1026	912		
1974 033A	SMS 1	7298	US	17 MAY	1436.2	2.4	35794	35783	136.380,468.825, 1682.500	5* 5*
1974 034A	INTERCOSMOS 11	7299	USSR	17 MAY	94.4	50.6	499	486		
1974 034B		7302	USSR	17 MAY	94.2	50.6	501	462		
1974 035A	COSMOS 655	7306	USSR	21 MAY	95.1	74.0	541	512		
1974 035B		7307	USSR	21 MAY	95.0	74.0	530	514		
1974 035C		7515	USSR	21 MAY	95.1	73.9	541	515		
1974 035D		7516	USSR	21 MAY	95.5	73.9	564	532		
1974 035E		7517	USSR	21 MAY	95.6	74.0	590	511		
1974 035F		7518	USSR	21 MAY	94.5	74.0	513	485		
1974 035G		7519	USSR	21 MAY	94.5	74.0	512	479		
1974 035H		8778	USSR	21 MAY	94.2	74.0	495	466		
1974 037A	LUNA 22	7315	USSR	29 MAY	SELENOCENTRIC ORBIT					
1974 039A	ATS 6	7318	US	30 MAY	1436.2	0.6	35810	35765	136.230,137.110	5*
1974 039C		7324	US	30 MAY	CURRENT ELEMENTS NOT MAINTAINED					
1974 040A	EXPLORER 52	7325	US	3 JUN	3077.2	85.6	124089	3319	136.290,400.650	5*
1974 040B		7326	US	3 JUN	92.3	89.6	482	299		
1974 044A	COSMOS 660	7337	USSR	18 JUN	108.8	82.9	1955	398		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1974 LAUNCHES (CONT'D)										
1974 044B		7338	USSR	18 JUN	108.7	82.9	1935	403		
1974 045A	COSMOS 661	7339	USSR	21 JUN	95.0	74.0	541	502		
1974 045B		7340	USSR	21 JUN	94.8	74.0	533	494		
1974 045C		7341	USSR	21 JUN	94.3	73.9	503	468		
1974 048A	COSMOS 663	7349	USSR	27 JUN	104.8	82.9	1005	969		
1974 048B		7350	USSR	27 JUN	104.6	82.9	994	966		
1974 050A	COSMOS 665	7352	USSR	29 JUN	718.4	65.9	38722	1667		
1974 050C		7354	USSR	29 JUN	707.3	66.1	38228	1612		
1974 052A	METEOR	7363	USSR	9 JUL	103.0	81.2	916	894		
1974 052B		7364	USSR	9 JUL	102.6	81.2	917	854		
1974 054A		7369	US	14 JUL	458.7	124.7	13746	13473		
1974 054B		7370	US	14 JUL	227.2	125.2	11683	233		
1974 054C		8599	US	14 JUL	458.7	124.7	13751	13470		
1974 056A	MOLNIYA 2	7376	USSR	23 JUL	717.7	63.2	38954	1398		
1974 056D		7382	USSR	23 JUL	733.9	63.1	39654	1495		
1974 060A	MOLNIYA 1-S	7392	USSR	29 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1974 060D		7399	USSR	29 JUL	274.9	46.7	15086	170		
1974 060E		7400	USSR	29 JUL	133.4	46.8	4168	376		
1974 063A		7411	US	9 AUG	101.6	98.7	875	804		
1974 063B		7412	US	9 AUG	101.6	98.7	873	802		
1974 066A	COSMOS 673	7417	USSR	16 AUG	97.0	81.2	636	603		
1974 066B		7418	USSR	16 AUG	97.2	81.2	675	577		
1974 066C		8424	USSR	16 AUG	97.0	81.2	636	605		
1974 069A	COSMOS 675	7424	USSR	29 AUG	113.6	74.0	1425	1365		
1974 069B		7426	USSR	29 AUG	113.5	74.0	1425	1354		
1974 070A	ANS	7427	NETH	30 AUG	91.4	97.9	465	231		
1974 071A	COSMOS 676	7433	USSR	11 SEP	100.9	74.0	816	795		
1974 071B		7434	USSR	11 SEP	100.8	74.0	817	784		
1974 072A	COSMOS 677	7435	USSR	19 SEP	114.4	74.0	1468	1398		
1974 072B	COSMOS 678	7436	USSR	19 SEP	115.9	74.0	1533	1468		
1974 072C	COSMOS 679	7437	USSR	19 SEP	115.7	74.0	1512	1468		
1974 072D	COSMOS 680	7438	USSR	19 SEP	115.5	74.0	1493	1468		
1974 072F	COSMOS 681	7439	USSR	19 SEP	115.3	74.0	1473	1467		
1974 072F	COSMOS 682	7440	USSR	19 SEP	115.1	74.0	1468	1454		
1974 072G	COSMOS 683	7441	USSR	19 SEP	114.9	74.0	1468	1436		
1974 072H	COSMOS 684	7442	USSR	19 SEP	114.7	74.0	1468	1417		
1974 072J		7443	USSR	19 SEP	117.7	74.0	1690	1473		
1974 075A	WESTAR 2	7466	US	10 OCT	1436.1	0.0	35794	35783		
1974 075B		7467	US	10 OCT	111.8	27.2	2397	223		
1974 075C		7468	US	10 OCT	605.6	24.7	34397	268		
1974 076A	COSMOS 687	7469	USSR	11 OCT	92.1	73.9	488	269		
1974 077A	ARIEL 5	7471	UK	15 OCT	95.0	2.9	542	499	137.680	5*
1974 077B		7472	US	15 OCT	94.9	2.8	533	493		
1974 079A	COSMOS 689	7476	USSR	18 OCT	105.0	82.9	1019	978		
1974 079B		7477	USSR	18 OCT	104.9	82.9	1015	971		
1974 081A	MOLNIYA 1	7480	USSR	24 OCT	717.7	63.9	39619	732		
1974 081D		7485	USSR	24 OCT	732.0	63.9	40306	749		
1974 083A	METEOR	7490	USSR	28 OCT	102.4	81.1	905	843		
1974 083B		7493	USSR	28 OCT	102.5	81.1	913	845		
1974 085B		7498	US	29 OCT	95.0	96.0	525	514		
1974 089A	NOAA 4	7529	US	15 NOV	114.9	101.5	1460	1448	136.770.137.140.	5*
									137.500.137.620,	5*
									1697.500	5*
1974 089C	AMSAT-OSCAR 7	7530	US	15 NOV	114.8	101.5	1460	1443		
1974 089C	INTASAT	7531	SPAIN	15 NOV	114.9	101.5	1460	1444		
1974 089D - 089EA			US	15 NOV	SEE NOTE 23*					23*
1974 092A	MOLNIYA 3	7540	USSR	21 NOV	717.6	63.9	39648	700		
1974 092E		7546	USSR	21 NOV	733.7	63.9	40439	701		
1974 093A	INTELSAT 4 F-8	7544	ITSO	21 NOV	1436.1	0.3	35798	35775		
1974 093B		7545	US	21 NOV	654.4	26.3	36585	595		
1974 094A	SKYNET 2B	7547	UK	23 NOV	1435.2	0.8	35782	35757		
1974 094D		7550	US	23 NOV	122.0	28.2	3232	309		
1974 097A	HELIOS 1	7567	FRG	10 DEC	HELIOCENTRIC ORBIT					
1974 097B		7568	US	10 DEC	CURRENT ELEMENTS NOT MAINTAINED					

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1974 LAUNCHES (CONT'D)										
1974 097C		7569	US	10 DEC	HELIOCENTRIC ORBIT					
1974 097D		7570	FRG	10 DEC	HELIOCENTRIC ORBIT					
1974 099A	METEOR	7574	USSR	17 DEC	102.3	81.2	901	838		
1974 099B		7575	USSR	17 DEC	102.3	81.2	924	815		
1974 100A	COSMOS 698	7576	USSR	18 DEC	95.1	74.0	543	514		
1974 100B		7577	USSR	18 DEC	95.1	74.0	544	505		
1974 100D		7636	USSR	18 DEC	94.7	74.0	555	460		
1974 100E		7695	USSR	18 DEC	93.7	74.0	474	446		
1974 100F		7722	USSR	18 DEC	94.7	73.9	546	463		
1974 100G		7723	USSR	18 DEC	95.2	73.9	552	512		
1974 100H		7724	USSR	18 DEC	95.0	73.9	534	508		
1974 100J		9793	USSR	18 DEC	92.8	74.0	437	393		
1974 101A	SYMPHONIE-A	7578	FR/FRG	19 DEC	1433.1	0.2	35786	35672		
1974 101B		7579	US	19 DEC	95.2	26.9	781	272		
1974 101E		8739	US	19 DEC	93.2	26.9	599	264		
1974 101F		8740	US	19 DEC	94.8	27.0	746	273		
1974 101G		9330	US	19 DEC	682.8	13.2	38238	378		
1974 102A	MOLNIYA 2	7583	USSR	21 DEC	717.7	64.5	39457	895		
1974 102D		7586	USSR	21 DEC	734.0	64.5	40276	879		
1974 103A	COSMOS 699	7587	USSR	24 DEC	91.9	65.0	377	359		
1974 103B - 103BC			USSR	24 DEC	SEE NOTE	24*				24*
1974 105A	COSMOS 700	7593	USSR	26 DEC	104.7	82.9	1003	963		
1974 105B		7594	USSR	26 DEC	104.6	82.9	991	964		
1975 LAUNCHES										
1975 004A	LANDSAT 2	7615	US	22 JAN	103.2	98.9	920	902	137.860,2229.500, 2265.500, 2287.500	5* 5* 5*
1975 004B - 004HB			US	22 JAN	SEE NOTE	23*				25*
1975 007A	COSMOS 706	7625	USSR	30 JAN	716.5	63.1	38877	1418		
1975 007D		7629	USSR	30 JAN	716.6	63.2	38904	1403		
1975 008A	COSMOS 707	7637	USSR	5 FEB	95.0	74.0	545	494		
1975 008B		7638	USSR	5 FEB	94.9	74.0	544	485		
1975 009A	MOLNIYA 2	7641	USSR	6 FEB	717.6	63.9	39713	632		
1975 009D		7653	USSR	6 FEB	733.3	64.0	40484	637		
1975 010A	STARLETTE	7646	FRANCE	6 FEB	104.1	49.8	1108	804		
1975 010B		7647	FRANCE	6 FEB	104.4	49.8	1137	803		
1975 010C		7654	FRANCE	6 FEB	104.0	49.8	1094	805		
1975 010D		7655	FRANCE	6 FEB	104.1	49.7	1101	804		
1975 010E		7659	FRANCE	6 FEB	104.3	49.8	1120	805		
1975 011A	SMS 2	7648	US	6 FEB	1436.0	0.1	35798	35774	136.380,468.825, 1682.500	5* 5*
1975 011B		7650	US	6 FEB	119.3	27.6	3027	275		
1975 012A	COSMOS 708	7663	USSR	12 FEB	113.5	69.2	1412	1369		
1975 012B		7665	USSR	12 FEB	113.4	69.2	1399	1367		
1975 014A	SRATS (TAIYO)	7671	JAPAN	24 FEB	116.0	31.5	2756	247		
1975 014B		7674	JAPAN	24 FEB	115.7	31.5	2733	246		
1975 016A	COSMOS 711	7678	USSR	28 FEB	115.4	74.0	1494	1463		
1975 016B	COSMOS 712	7679	USSR	28 FEB	114.9	73.9	1491	1413		
1975 016C	COSMOS 713	7680	USSR	28 FEB	114.7	73.9	1488	1397		
1975 016D	COSMOS 714	7681	USSR	28 FEB	115.2	73.9	1492	1446		
1975 016E	COSMOS 715	7682	USSR	28 FEB	115.7	74.0	1505	1471		
1975 016F	COSMOS 716	7683	USSR	28 FEB	115.9	74.0	1516	1480		
1975 016G	COSMOS 717	7684	USSR	28 FEB	116.1	73.9	1537	1481		
1975 016H	COSMOS 718	7685	USSR	28 FEB	115.1	73.9	1491	1431		
1975 016J		7686	USSR	28 FEB	118.0	74.0	1707	1480		
1975 017A		7687	US	10 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1975 017B		7688	US	10 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1975 022A	INTERCOSMOS 13	7710	USSR	27 MAR	103.4	82.9	1558	284		
1975 022B		7713	USSR	27 MAR	102.9	82.9	1523	280		
1975 023A	METEOR	7714	USSR	1 APR	102.5	81.2	895	865		
1975 023B		7715	USSR	1 APR	102.5	81.2	919	845		
1975 024A	COSMOS 723	7718	USSR	2 APR	103.7	64.7	983	886		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1975 LAUNCHES (CONT'D)										
1975 025A	COSMOS 724	7727	USSR	7 APR	103.0	65.5	940	866		
1975 027A	GEOS 3	7734	US	9 APR	101.7	114.9	858	828	136.320,2247.000	5*
1975 027B		7735	US	9 APR	101.7	114.9	857	824		
1975 028A	COSMOS 726	7736	USSR	11 APR	104.6	82.9	999	957		
1975 028B		7737	USSR	11 APR	104.5	82.9	988	957		
1975 029A	MOLNIYA 3	7738	USSR	14 APR	717.7	64.4	39456	897		
1975 029D		7741	USSR	14 APR	733.0	64.3	40229	874		
1975 033A	ARIABAT	7752	INDIA	19 APR	96.4	50.6	609	567		
1975 033B		7753	USSR	19 APR	96.3	50.6	621	541		
1975 033C		8058	USSR	19 APR	95.4	50.6	558	519		
1975 033D		9839	USSR	19 APR	92.4	50.5	419	369		
1975 034A	COSMOS 729	7768	USSR	22 APR	104.9	82.9	1013	976		
1975 034B		7769	USSR	22 APR	104.8	82.9	1005	975		
1975 036A	MOLNIYA 1	7780	USSR	29 APR	717.7	63.2	38957	1394		
1975 036D		7800	USSR	29 APR	732.8	63.2	39675	1421		
1975 037A	EXPLORER 53	7788	US	7 MAY	94.5	2.9	496	489	136.680	5*
1975 037B		7789	US	7 MAY	94.4	2.9	493	486		
1975 038A	ANIK 3	7790	CANADA	7 MAY	1436.0	0.0	35793	35780		
1975 038D		7794	US	7 MAY	627.3	24.1	35538	254		
1975 039B	CASTOR	7802	FRANCE	17 MAY	98.1	29.9	1071	267	136.250	5*
1975 039G		8035	FRANCE	17 MAY	95.6	29.9	837	258		
1975 042A	INTELSAT 4 F-1	7815	ITSO	22 MAY	1436.2	0.0	35790	35787		
1975 042B		7902	US	22 MAY	655.2	25.5	36589	635		
1975 043A		7816	US	24 MAY	101.9	98.8	896	806		
1975 043B		7817	US	24 MAY	101.8	98.8	891	806		
1975 045A	COSMOS 732	7820	USSR	28 MAY	114.6	74.0	1472	1405		
1975 045B	COSMOS 733	7822	USSR	28 MAY	116.2	74.0	1555	1472		
1975 045C	COSMOS 734	7823	USSR	28 MAY	115.0	74.0	1473	1445		
1975 045D	COSMOS 735	7824	USSR	28 MAY	115.2	74.0	1475	1463		
1975 045E	COSMOS 736	7825	USSR	28 MAY	115.5	74.0	1488	1471		
1975 045F	COSMOS 737	7826	USSR	28 MAY	115.9	74.0	1530	1472		
1975 045G	COSMOS 738	7827	USSR	28 MAY	115.7	74.0	1510	1471		
1975 045H	COSMOS 739	7828	USSR	28 MAY	114.8	74.0	1474	1424		
1975 045J		7831	USSR	28 MAY	118.0	73.9	1696	1488		
1975 049A	MOLNIYA 1	7903	USSR	5 JUN	717.7	63.0	39470	882		
1975 049B	SRET 2	7910	FRANCE	5 JUN	736.4	62.9	40385	884	137.530	
1975 049F		8548	USSR	5 JUN	730.6	63.0	40067	917		
1975 050A	VENERA 9	7915	USSR	8 JUN	CIRCUM-VENEREAN ORBIT					
1975 051C	SSU 1	7937	US	8 JUN	113.6	95.0	1398	1389		
1975 051D		7938	US	8 JUN	113.2	94.9	1408	1349		
1975 051E		7939	US	8 JUN	113.9	95.1	1431	1387		
1975 052A	NIMBUS 6	7924	US	12 JUN	107.4	99.9	1118	1103	136.500,401.200,	5*
									1702.500.	5*
									2253.000	5*
1975 052B		7946	US	12 JUN	107.2	99.9	1106	1095		
1975 054A	VENERA 10	7947	USSR	14 JUN	CIRCUM-VENEREAN ORBIT					
1975 055A		7963	US	18 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1975 055B		7964	US	18 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1975 056A	COSMOS 744	7968	USSR	20 JUN	97.0	81.2	636	600		
1975 056B		7969	USSR	20 JUN	97.2	81.2	666	587		
1975 057A	OSO 8	7970	US	21 JUN	95.5	32.9	552	538	136.920.2212.500	5*
1975 057B		7971	US	21 JUN	95.5	32.9	551	537		
1975 062A	COSMOS 749	8009	USSR	4 JUL	95.1	74.0	555	495		
1975 062B		8010	USSR	4 JUL	95.0	74.0	550	493		
1975 062C		8107	USSR	4 JUL	94.6	74.1	542	465		
1975 063A	MOLNIYA 2	8015	USSR	8 JUL	718.4	63.1	38986	1401		
1975 063D		8018	USSR	8 JUL	732.9	63.1	39751	1350		
1975 064A	METEOR 2	8026	USSR	11 JUL	102.4	81.2	890	858		
1975 064B		8027	USSR	11 JUL	102.5	81.2	920	839		
1975 064C		8039	USSR	11 JUL	102.4	81.2	891	856		
1975 064D		8110	USSR	11 JUL	102.2	81.3	898	838		
1975 067A	COSMOS 750	8036	USSR	17 JUL	91.9	71.0	496	249		
1975 069A	COSMOS 752	8043	USSR	24 JUL	94.4	65.8	516	472		
1975 069B		8044	USSR	24 JUL	94.3	65.8	512	459		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1975 LAUNCHES (CONT'D)										
1975 072A	COS-B	8062	FSA	9 AUG	2203.5	95.3	92898	6534	136.950	5*
1975 072B		8063	US	9 AUG	139.0	89.2	4696	332		
1975 074A	COSMOS 755	8072	USSR	14 AUG	104.9	82.8	1014	971		
1975 074B		8073	USSR	14 AUG	104.7	82.8	1007	965		
1975 075A	VIKING ORBITER 1	8108	US	20 AUG	AREOCENTRIC ORBIT					
1975 075B		8111	US	20 AUG	HELIOCENTRIC ORBIT					
1975 076A	COSMOS 756	8127	USSR	22 AUG	97.2	81.2	635	619		
1975 076B		8128	USSR	22 AUG	97.3	81.2	680	585		
1975 077A	SYMPHONIE-B	8132	FR/FRG	27 AUG	1436.2	0.1	35803	35776		
1975 077B		8133	US	27 AUG	109.6	25.3	2009	407		
1975 077C		8134	US	27 AUG	678.5	13.6	38029	372		
1975 079A	MOLNIYA 1	8187	USSR	2 SEP	717.7	63.9	39815	534		
1975 079E		8274	USSR	2 SEP	735.9	63.8	40609	639		
1975 081A	MOLNIYA 2	8195	USSR	9 SEP	717.8	63.1	39102	1255		
1975 081D		8418	USSR	9 SEP	733.7	63.1	39864	1277		
1975 082A	KIKU	8197	JAPAN	9 SEP	105.9	46.9	1103	975		
1975 082B		8352	JAPAN	9 SEP	105.9	46.9	1103	974		
1975 083A	VIKING ORBITER 2	8199	US	9 SEP	AREOCENTRIC ORBIT					
1975 083B		8272	US	9 SEP	HELIOCENTRIC ORBIT					
1975 086A	COSMOS 761	8285	USSR	17 SEP	114.6	74.0	1483	1401		
1975 086B	COSMOS 762	8286	USSR	17 SEP	115.1	74.0	1486	1439		
1975 086C	COSMOS 763	8287	USSR	17 SEP	115.8	74.0	1511	1476		
1975 086D	COSMOS 764	8288	USSR	17 SEP	116.0	74.0	1527	1480		
1975 086E	COSMOS 765	8289	USSR	17 SEP	116.3	74.0	1552	1479		
1975 086F	COSMOS 766	8290	USSR	17 SEP	114.9	74.0	1485	1421		
1975 086G	COSMOS 767	8291	USSR	17 SEP	115.3	73.9	1488	1457		
1975 086H	COSMOS 768	8292	USSR	17 SEP	115.5	74.0	1493	1473		
1975 086J		8295	USSR	17 SEP	117.8	74.0	1685	1482		
1975 087A	METEOR	8293	USSR	18 SEP	102.3	81.2	916	821		
1975 087B		8294	USSR	18 SEP	102.4	81.2	923	828		
1975 089A	COSMOS 770	8325	USSR	24 SEP	109.1	82.9	1209	1169		
1975 089B		8326	USSR	24 SEP	109.0	82.9	1199	1166		
1975 091A	INTELSAT 4A F-1	8330	ITSO	26 SEP	1436.2	0.1	35793	35783		
1975 091B		8331	US	26 SEP	656.7	22.2	36763	535		
1975 092A	D2-B	8332	FRANCE	27 SEP	96.7	37.1	707	499		
1975 092B		8333	FRANCE	27 SEP	96.8	37.1	715	499		
1975 092C		8336	FRANCE	27 SEP	96.3	37.1	670	490		
1975 092D		8337	FRANCE	27 SEP	96.6	37.0	686	506		
1975 092E		8340	FRANCE	27 SEP	96.2	37.1	667	486		
1975 092F		8341	FRANCE	27 SEP	96.7	37.1	699	499		
1975 092G		8342	FRANCE	27 SEP	96.5	37.1	694	492		
1975 094A	COSMOS 773	8343	USSR	30 SEP	100.8	74.0	807	790		
1975 094B		8344	USSR	30 SEP	100.7	74.0	809	777		
1975 094C		8346	USSR	30 SEP	100.6	74.0	806	774		
1975 097A	COSMOS 775	8357	USSR	8 OCT	1434.0	1.1	35865	35627		
1975 097D		8414	USSR	8 OCT	630.0	46.9	35495	436		
1975 097E		8415	USSR	8 OCT	632.4	47.0	35569	488		
1975 099A	TIP 2	8361	US	12 OCT	98.8	90.3	828	579		
1975 099B		8364	US	12 OCT	94.0	90.7	600	350		
1975 099C		8409	US	12 OCT	95.6	90.8	699	401		
1975 100A	GOES 1	8366	US	16 OCT	1436.1	0.2	35798	35776	136.380.468.825. 1682.500	5* 5*
1975 100C		8368	US	16 OCT	545.2	23.6	31279	177		
1975 102M		8631	USSR	29 OCT	92.9	65.8	432	407		
1975 102N		8632	USSR	29 OCT	92.6	65.8	412	396		
1975 102X		8641	USSR	29 OCT	92.3	65.8	401	384		
1975 102AB		8647	USSR	29 OCT	93.7	65.0	491	428		
1975 102AC		8648	USSR	29 OCT	93.1	64.9	454	408		
1975 102AD		8649	USSR	29 OCT	92.2	65.8	390	378		
1975 102AL		8656	USSR	29 OCT	93.3	65.8	478	404		
1975 102AP		8712	USSR	29 OCT	90.3	64.8	308	278		
1975 102BJ		8731	USSR	29 OCT	92.1	65.0	401	355		
1975 102BP		8736	USSR	29 OCT	92.0	64.9	406	348		
1975 103A	COSMOS 778	8419	USSR	4 NOV	104.8	82.9	1005	975		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1975 LAUNCHES (CONT'D)										
1975 103B		8421	USSR	4 NOV	104.7	82.9	997	972		
1975 105A	MOLNIYA 3	8425	USSR	14 NOV	717.7	63.0	39156	1199		
1975 105D		8462	USSR	14 NOV	733.8	63.0	39918	1224		
1975 107A	EXPLORER 55	8440	US	20 NOV	89.6	19.6	253	252	137.230,2289.500	5*
1975 109A	COSMOS 781	8444	USSR	21 NOV	95.1	74.0	543	508		
1975 109B		8445	USSR	21 NOV	95.0	74.0	553	488		
1975 109C		8447	USSR	21 NOV	94.1	73.9	499	457		
1975 109D		8448	USSR	21 NOV	93.6	74.0	480	432		
1975 109E		8449	USSR	21 NOV	93.4	73.9	460	429		
1975 109F		8776	USSR	21 NOV	93.7	74.0	476	442		
1975 109G		8777	USSR	21 NOV	93.9	74.0	492	446		
1975 109H		9693	USSR	21 NOV	93.2	74.0	447	419		
1975 112A	COSMOS 783	8458	USSR	28 NOV	100.9	74.0	814	794		
1975 112B		8459	USSR	28 NOV	100.8	74.0	812	786		
1975 112C		9572	USSR	28 NOV	101.0	74.0	813	800		
1975 114B		8468	US	4 DEC	98.9	96.2	1186	228		
1975 115A	INTERCOSMOS 14	8471	USSR	11 DEC	104.9	73.9	1651	332		
1975 115B		8472	USSR	11 DEC	104.7	74.0	1639	325		
1975 115C		8474	USSR	11 DEC	105.9	73.0	1715	367		
1975 115D		8475	USSR	11 DEC	106.2	73.4	1650	456		
1975 115E		8765	USSR	11 DEC	106.0	72.3	1680	409		
1975 115F		8766	USSR	11 DEC	103.2	72.6	1450	371		
1975 116A	COSMOS 785	8473	USSR	12 DEC	104.2	65.0	1016	904		
1975 117A	RCA-SATCOM-I	8476	US	13 DEC	1436.1	0.0	35791	35783		
1975 117C		8479	US	13 DEC	601.0	26.6	34252	172		
1975 118A		8482	US	14 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1975 118C		8516	US	14 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1975 118D		8517	US	14 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1975 121A	MOLNIYA 2	8492	USSR	17 DEC	717.7	63.0	39715	640		
1975 121D		8529	USSR	17 DEC	732.3	62.9	40416	655		
1975 122A	PROGNOZ 4	8510	USSR	22 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1975 123A	RADUGA	8513	USSR	22 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1975 123D		8546	USSR	22 DEC	476.1	46.4	27380	258		
1975 123E		8547	USSR	22 DEC	557.8	46.4	32412	260		
1975 124A	METEOR	8519	USSR	25 DEC	102.3	81.2	903	840		
1975 124B		8520	USSR	25 DEC	102.4	81.2	911	839		
1975 125A	MOLNIYA 3	8521	USSR	27 DEC	717.7	63.0	39700	652		
1975 125F		8600	USSR	27 DEC	731.1	63.0	40357	653		
1976 LAUNCHES										
1976 001A	COSMOS 787	8530	USSR	6 JAN	95.2	74.0	543	516		
1976 001B		8531	USSR	6 JAN	95.1	74.0	547	503		
1976 001C		8549	USSR	6 JAN	94.0	74.0	493	450		
1976 001E		9731	USSR	6 JAN	94.2	73.9	500	462		
1976 001F		9790	USSR	6 JAN	93.1	74.0	451	406		
1976 001G		9791	USSR	6 JAN	93.9	74.0	491	448		
1976 001H		9792	USSR	6 JAN	94.0	73.9	496	453		
1976 001J		9837	USSR	6 JAN	93.0	73.9	438	408		
1976 001K		9838	USSR	6 JAN	92.8	74.0	432	397		
1976 003A	HELIOS 2	8582	FRG	15 JAN	HELIOCENTRIC ORBIT					
1976 003B		8583	US	15 JAN	HELIOCENTRIC ORBIT					
1976 003C		8584	US	15 JAN	HELIOCENTRIC ORBIT					
1976 004A	CTS	8585	CANADA	17 JAN	1436.2	0.2	35821	35755	2277.500	5*
1976 004D		8598	US	17 JAN	611.8	25.2	34824	161		
1976 005A	COSMOS 789	8591	USSR	20 JAN	104.9	82.9	1019	971		
1976 005B		8597	USSR	20 JAN	104.8	82.9	1012	968		
1976 006A	MOLNIYA 1	8601	USSR	22 JAN	717.7	63.2	39374	980		
1976 006D		8701	USSR	22 JAN	695.4	63.1	38294	951		
1976 007A	COSMOS 790	8604	USSR	22 JAN	95.1	74.0	556	498		
1976 007B		8605	USSR	22 JAN	94.9	74.0	536	500		
1976 008A	COSMOS 791	8607	USSR	28 JAN	114.7	74.0	1488	1402		
1976 008B	COSMOS 792	8608	USSR	28 JAN	115.1	74.0	1493	1437		
1976 008C	COSMOS 793	8609	USSR	28 JAN	114.9	74.0	1493	1418		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1976 LAUNCHES (CONT'D)										
1976 008D	COSMOS 794	8610	USSR	28 JAN	115.3	74.0	1496	1452		
1976 008E	COSMOS 795	8611	USSR	28 JAN	115.6	74.0	1500	1468		
1976 008F	COSMOS 796	8612	USSR	28 JAN	115.8	74.0	1517	1473		
1976 008G	COSMOS 797	8613	USSR	28 JAN	116.0	74.0	1531	1480		
1976 008H	COSMOS 798	8614	USSR	28 JAN	116.3	74.0	1555	1480		
1976 008J		8615	USSR	28 JAN	117.9	74.0	1697	1485		
1976 010A	INTELSAT 4A F-2	8620	ITSO	29 JAN	1436.1	0.0	35790	35785		
1976 010B		8621	US	29 JAN	655.2	21.0	36661	562		
1976 011A	COSMOS 800	8645	USSR	3 FEB	105.0	82.9	1016	982		
1976 011B		8646	USSR	3 FEB	104.9	82.9	1007	978		
1976 012A	COSMOS 801	8658	USSR	5 FEB	93.1	70.9	601	257		
1976 014A	COSMOS 803	8688	USSR	12 FEB	96.3	65.8	611	559		
1976 014B		8689	USSR	12 FEB	96.2	65.8	612	548		
1976 014C		8690	USSR	12 FEB	96.3	65.8	611	557		
1976 017A	MARISAT 1	8697	US	19 FEB	1436.2	1.5	35808	35771		
1976 017C		8702	US	19 FEB	623.5	25.3	35297	295		
1976 019A	UME	8709	JAPAN	29 FEB	105.1	69.6	1011	996		
1976 019B		8710	JAPAN	29 FEB	105.1	69.6	1012	996		
1976 021A	MOLNIYA 1	8741	USSR	11 MAR	717.8	63.4	39873	486		
1976 021D		9411	USSR	11 MAR	731.0	63.4	40545	460		
1976 022A	COSMOS 807	8744	USSR	12 MAR	109.0	82.9	1968	397		
1976 022B		8745	USSR	12 MAR	108.8	82.9	1959	392		
1976 023A	LES 8	8746	US	15 MAR	1435.8	25.2	35807	35755		
1976 023B	LES 9	8747	US	15 MAR	1436.5	25.3	35809	35783		
1976 023C	SOLRAD 11A	8748	US	15 MAR	7331.9	26.9	119158	118122		
1976 023D	SOLRAD 11B	8749	US	15 MAR	7331.8	27.2	118995	118283	136.530	5*
1976 023F		8751	US	15 MAR	1455.4	25.4	36942	35775		
1976 023G		8752	US	15 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1976 023H		8753	US	15 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1976 023J		8832	US	15 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1976 024A	COSMOS 808	8754	USSR	16 MAR	97.0	81.2	636	599		
1976 024B		8755	USSR	16 MAR	97.1	81.2	677	565		
1976 026A	MOLNIYA 1	8762	USSR	19 MAR	717.7	63.3	39888	463		
1976 026D		8792	USSR	19 MAR	696.4	63.2	38998	297		
1976 029A	RCA-SATCOM-II	8774	US	26 MAR	1436.0	0.1	35787	35784		
1976 029C		8793	US	26 MAR	604.8	26.5	34429	195		
1976 031A	COSMOS 812	8794	USSR	6 APR	95.1	74.0	545	506		
1976 031B		8795	USSR	6 APR	95.0	74.0	542	498		
1976 031C		9836	USSR	6 APR	93.8	74.0	485	439		
1976 032A	METEOR	8799	USSR	7 APR	102.2	81.2	894	840		
1976 032B		8800	USSR	7 APR	102.3	81.2	917	827		
1976 035A	NATO III-A	8808	NATO	22 APR	1436.1	2.3	35839	35734		
1976 035C		8810	US	22 APR	585.5	26.4	33416	190		
1976 037A	COSMOS 816	8812	USSR	28 APR	94.4	65.8	511	478		
1976 037B - 037AA			USSR	28 APR	SEE NOTE 26*					26*
1976 038A		8818	US	30 APR	107.4	63.4	1144	1077		
1976 038B		8819	US	30 APR	107.3	63.4	1139	1072		
1976 038C	SSU-1	8835	US	30 APR	107.4	63.4	1140	1082		
1976 038D	SSU-2	8836	US	30 APR	107.4	63.4	1141	1081		
1976 038E		8839	US	30 APR	107.6	63.4	1152	1084		
1976 038F		8842	US	30 APR	107.3	63.4	1136	1076		
1976 038G		8843	US	30 APR	107.6	63.4	1152	1084		
1976 038H		8859	US	30 APR	107.1	63.4	1122	1065		
1976 038J	SSU-3	8884	US	30 APR	107.4	63.4	1145	1077		
1976 038K		9796	US	30 APR	107.1	63.4	1122	1065		
1976 039A	LAGEOS	8820	US	4 MAY	225.4	109.8	5945	5838		
1976 039B		8821	US	4 MAY	152.4	109.6	5845	308		
1976 039C		8822	US	4 MAY	225.4	109.8	5944	5837		
1976 041A	MOLNIYA 3	8833	USSR	12 MAY	717.7	63.6	39788	562		
1976 041D		8844	USSR	12 MAY	733.4	63.6	40575	551		
1976 042A	COMSTAR 1	8838	US	13 MAY	1436.2	0.1	35793	35783		
1976 042B		8840	US	13 MAY	649.5	21.3	36308	621		
1976 043A	METEOR	8845	USSR	15 MAY	102.2	81.2	892	840		
1976 043B		8846	USSR	15 MAY	102.4	81.2	915	836		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1976 LAUNCHES (CONT'D)										
1976 047A	P 76-5	8860	US	22 MAY	105.6	99.6	1060	994		
1976 047B		8861	US	22 MAY	105.6	99.6	1059	994		
1976 047C		8867	US	22 MAY	106.5	99.3	1128	1010		
1976 047D		8868	US	22 MAY	104.9	99.9	1034	953		
1976 049A	COSMOS 822	8865	USSR	28 MAY	93.7	74.0	644	275		
1976 049B		8866	USSR	28 MAY	92.9	74.0	574	268		
1976 050A		8871	US	2 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1976 050B		8872	US	2 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1976 051A	COSMOS 823	8873	USSR	2 JUN	104.9	82.9	1013	976		
1976 051B		8874	USSR	2 JUN	104.8	82.9	1004	975		
1976 053A	MARISAT 2	8882	US	10 JUN	1436.2	1.9	35798	35777		
1976 053B		8883	US	10 JUN	91.7	28.5	463	256		
1976 053F		8910	US	10 JUN	620.0	25.9	35181	229		
1976 054A	COSMOS 825	8889	USSR	15 JUN	114.7	74.0	1487	1398		
1976 054B	COSMOS 826	8890	USSR	15 JUN	116.2	73.9	1546	1483		
1976 054C	COSMOS 827	8891	USSR	15 JUN	114.9	73.9	1490	1415		
1976 054D	COSMOS 828	8892	USSR	15 JUN	115.1	73.9	1490	1435		
1976 054E	COSMOS 829	8893	USSR	15 JUN	115.3	73.9	1492	1452		
1976 054F	COSMOS 830	8894	USSR	15 JUN	115.5	73.9	1494	1470		
1976 054G	COSMOS 831	8895	USSR	15 JUN	115.8	73.9	1509	1476		
1976 054H	COSMOS 832	8896	USSR	15 JUN	116.0	73.9	1523	1483		
1976 054J		8897	USSR	15 JUN	117.9	74.0	1691	1488		
1976 056A	INTERCOSMOS 15	8903	USSR	19 JUN	94.5	74.0	513	482		
1976 056B		8904	USSR	19 JUN	94.4	74.0	514	473		
1976 057A	SALYUT 5	8911	USSR	22 JUN	89.6	51.5	262	253		
1976 059A		8916	US	26 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1976 059C		8918	US	26 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1976 059D		8919	US	26 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1976 061A	COSMOS 836	8923	USSR	29 JUN	100.9	74.0	818	789		
1976 061B		8924	USSR	29 JUN	100.8	74.0	811	787		
1976 062A	COSMOS 837	8927	USSR	1 JUL	98.4	62.7	942	431		
1976 062F		8931	USSR	1 JUL	98.3	62.7	929	433		
1976 063A	COSMOS 838	8932	USSR	2 JUL	93.1	65.0	444	417		
1976 065B		9007	US	8 JUL	176.9	97.5	7890	233		
1976 065C		9008	US	8 JUL	97.2	96.3	633	625		
1976 066A	PALAPA 1	9009	INDNSA	8 JUL	1436.2	0.0	35795	35782		
1976 066C		9017	US	8 JUL	632.5	24.8	35819	237		
1976 067A	COSMOS 839	9011	USSR	8 JUL	116.8	65.8	2095	986		
1976 067B		9013	USSR	8 JUL	116.6	65.8	2087	975		
1976 067C		9016	USSR	8 JUL	116.8	65.8	2093	990		
1976 069A	COSMOS 841	9022	USSR	15 JUL	100.7	74.0	807	786		
1976 069B		9023	USSR	15 JUL	100.7	74.0	809	776		
1976 070A	COSMOS 842	9025	USSR	21 JUL	104.9	82.9	1010	972		
1976 070B		9044	USSR	21 JUL	104.7	82.9	999	970		
1976 073A	COMSTAR 2	9047	US	22 JUL	1436.1	0.1	35798	35775		
1976 073B		9329	US	22 JUL	648.3	22.0	36293	576		
1976 074A	MOLNIYA 1	9049	USSR	23 JUL	717.8	63.0	39626	730		
1976 074F		9269	USSR	23 JUL	698.4	62.9	38689	707		
1976 075A	COSMOS 845	9053	USSR	27 JUL	95.1	74.0	549	508		
1976 075B		9054	USSR	27 JUL	95.0	74.0	548	498		
1976 075C		9058	USSR	27 JUL	94.5	74.0	521	472		
1976 075D		9267	USSR	27 JUL	96.9	74.0	727	496		
1976 075E		9268	USSR	27 JUL	97.0	74.0	732	508		
1976 075F		9665	USSR	27 JUL	94.6	73.9	523	478		
1976 075G		9718	USSR	27 JUL	94.5	74.0	522	476		
1976 075H		9789	USSR	27 JUL	94.7	74.0	527	484		
1976 076A	INTERCOSMOS 16	9055	USSR	27 JUL	94.3	50.5	516	461		
1976 076B		9056	USSR	27 JUL	94.2	50.5	508	458		
1976 077A	NOAA 5	9057	US	29 JUL	116.2	102.0	1523	1506	136.770.137.140. 137.500.137.620, 1697.500	5* 5* 5*
1976 077B		9063	US	29 JUL	116.2	102.0	1523	1505		
1976 078A	COSMOS 846	9061	USSR	29 JUL	104.7	82.9	1013	955		
1976 078B		9062	USSR	29 JUL	104.6	82.9	1001	956		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1976 LAUNCHES (CONT'D)										
1976 080A		9270	US	6 AUG	CURRENT ELEMENTS NOT MAINTAINED					
1976 080B		9271	US	6 AUG	CURRENT ELEMENTS NOT MAINTAINED					
1976 083A	COSMOS 849	9382	USSR	18 AUG	94.7	70.9	753	259		
1976 083B		9383	USSR	18 AUG	93.5	70.9	639	262		
1976 084A	COSMOS 850	9387	USSR	26 AUG	89.6	70.9	294	224		
1976 085A	COSMOS 851	9389	USSR	27 AUG	96.6	81.1	636	567		
1976 085B		9390	USSR	27 AUG	96.7	81.2	663	545		
1976 087A		9394	PRC	30 AUG	106.2	69.1	1915	193		
1976 087B		9395	PRC	30 AUG	103.6	69.1	1676	186		
1976 088C		9400	USSR	1 SEP	89.4	62.7	259	232		
1976 089A	TIP 3	9403	US	1 SEP	97.9	89.2	868	451		
1976 089B		9404	US	1 SEP	95.3	90.3	734	342		
1976 089C		9409	US	1 SEP	94.5	90.1	669	328		
1976 089D		9410	US	1 SEP	95.5	90.4	748	343		
1976 091A		9415	US	11 SEP	101.5	98.6	846	820		
1976 091B		9419	US	11 SEP	101.5	98.6	846	818		
1976 091C		9420	US	11 SEP	101.5	98.6	846	819		
1976 091D		9474	US	11 SEP	101.5	98.7	848	816		
1976 091E		9483	US	11 SEP	101.5	98.6	852	817		
1976 091F		9484	US	11 SEP	101.6	98.6	855	817		
1976 091G		9518	US	11 SEP	101.5	98.6	846	817		
1976 092A	RADUGA	9416	USSR	11 SEP	CURRENT ELEMENTS NOT MAINTAINED					
1976 092D		9440	USSR	11 SEP	606.3	46.6	34564	138		
1976 092E		9441	USSR	11 SEP	199.0	46.6	9719	105		
1976 098A	COSMOS 858	9443	USSR	29 SEP	100.8	74.0	811	791		
1976 098B		9444	USSR	29 SEP	100.7	74.0	813	780		
1976 101A	MARISAT 3	9478	US	14 OCT	1436.2	2.2	35803	35773		
1976 101E		9542	US	14 OCT	617.7	26.6	35107	189		
1976 102A	METEOR	9481	USSR	15 OCT	102.4	81.2	893	855		
1976 102B		9482	USSR	15 OCT	102.5	81.2	925	834		
1976 103A	COSMOS 860	9486	USSR	17 OCT	104.3	64.6	1017	909		
1976 104A	COSMOS 861	9494	USSR	21 OCT	104.3	64.8	997	927		
1976 105A	COSMOS 862	9495	USSR	22 OCT	718.8	63.1	39609	798		
1976 105D		9506	USSR	22 OCT	711.7	63.1	39178	876		
1976 105E		9888	USSR	22 OCT	719.8	63.1	39771	687		
1976 105F		9889	USSR	22 OCT	718.3	63.0	39599	783		
1976 105G		9890	USSR	22 OCT	717.9	63.1	39539	822		
1976 105H		9891	USSR	22 OCT	718.7	63.7	39528	873		
1976 105J		9892	USSR	22 OCT	717.7	63.0	39616	737		
1976 105K		9893	USSR	22 OCT	716.4	62.9	39705	585		
1976 105L		9894	USSR	22 OCT	715.2	63.1	39441	787		
1976 105M		9895	USSR	22 OCT	719.9	63.2	39685	776		
1976 105N		9896	USSR	22 OCT	724.5	63.1	39899	789		
1976 105P		9902	USSR	22 OCT	725.5	63.0	40021	715		
1976 107A	EKRAN	9503	USSR	26 OCT	1436.2	0.0	36015	35562		
1976 107D		9540	USSR	26 OCT	617.2	46.7	35109	162		
1976 107E		9541	USSR	26 OCT	462.0	46.6	26750	87		
1976 108A	COSMOS 864	9509	USSR	29 OCT	104.8	82.9	1010	965		
1976 108B		9510	USSR	29 OCT	104.7	82.9	999	965		
1976 111F		9582	USSR	23 NOV	91.7	62.8	382	337		
1976 111G		9583	USSR	23 NOV	90.5	62.8	308	294		
1976 111J		9585	USSR	23 NOV	90.8	62.8	389	244		
1976 112A	PROGNOZ 5	9557	USSR	25 NOV	5727.5	65.9	196906	2419		
1976 113A	COSMOS 868	9561	USSR	26 NOV	93.2	65.0	446	422		
1976 115A	COSMOS 870	9573	USSR	2 DEC	95.2	73.9	548	511		
1976 115B		9576	USSR	2 DEC	95.1	74.0	552	497		
1976 115C		9577	USSR	2 DEC	94.2	73.9	501	469		
1976 116A	MOLNIYA 2	9574	USSR	2 DEC	717.5	63.2	39748	595		
1976 116D		9579	USSR	2 DEC	731.9	63.2	40461	590		
1976 118A	COSMOS 871	9588	USSR	7 DEC	114.7	74.0	1466	1419		
1976 118B	COSMOS 872	9589	USSR	7 DEC	114.4	74.0	1466	1400		
1976 118C	COSMOS 873	9590	USSR	7 DEC	115.5	74.0	1497	1466		
1976 118D	COSMOS 874	9591	USSR	7 DEC	115.7	74.0	1517	1466		
1976 118E	COSMOS 875	9592	USSR	7 DEC	114.9	74.0	1466	1437		

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1976 LAUNCHES (CONT'D)										
1976 118F	COSMOS 876	9593	USSR	7 DEC	116.0	74.0	1540	1465		
1976 118G	COSMOS 877	9594	USSR	7 DEC	115.1	74.0	1466	1456		
1976 118H	COSMOS 878	9595	USSR	7 DEC	115.3	74.0	1476	1465		
1976 118J		9598	USSR	7 DEC	117.6	74.0	1689	1465		
1976 120A	COSMOS 880	9601	USSR	9 DEC	96.4	65.8	625	551		
1976 120B		9604	USSR	9 DEC	95.3	65.8	624	539		
1976 120C		9605	USSR	9 DEC	96.4	65.8	625	552		
1976 122A	COSMOS 883	9610	USSR	15 DEC	104.8	82.9	1011	961		
1976 122B		9613	USSR	15 DEC	104.6	82.9	1002	959		
1976 124A	COSMOS 885	9615	USSR	17 DEC	94.3	65.8	516	459		
1976 124B - 124S			USSR	17 DEC	SEE NOTE	27*				27*
1976 125A		9627	US	19 DEC	92.2	96.9	514	261		
1976 125B		9628	US	19 DEC	89.6	96.8	302	218		
1976 126A	COSMOS 886	9634	USSR	27 DEC	113.8	65.8	2303	503		
1976 126B - 126AQ			USSR	27 DEC	SEE NOTE	28*				28*
1976 127A	MOLNIYA 3	9635	USSR	28 DEC	717.8	62.9	39705	652		
1976 127E		9647	USSR	28 DEC	732.4	62.9	40433	640		
1976 128A	COSMOS 887	9637	USSR	28 DEC	104.7	82.9	1018	952		
1976 128B		9638	USSR	28 DEC	104.6	82.9	1008	951		
1977 LAUNCHES										
1977 002A	METEOR 2	9661	USSR	6 JAN	102.9	81.2	906	889		
1977 002B		9662	USSR	6 JAN	102.9	81.2	939	863		
1977 002C		9663	USSR	6 JAN	102.8	81.2	903	885		
1977 002D		9664	USSR	6 JAN	102.8	81.2	903	889		
1977 004A	COSMOS 890	9737	USSR	20 JAN	105.1	82.9	1021	980		
1977 004B		9738	USSR	20 JAN	104.9	82.9	1009	980		
1977 005A	NATO III-B	9785	NATO	28 JAN	1436.0	2.8	35789	35779		
1977 005B		9786	US	28 JAN	104.2	28.0	1299	617		
1977 005C		9787	US	28 JAN	614.3	26.7	34950	167		
1977 005D		9809	US	28 JAN	CURRENT ELEMENTS NOT MAINTAINED					
1977 005E		9810	US	28 JAN	CURRENT ELEMENTS NOT MAINTAINED					
1977 005F		9811	US	28 JAN	CURRENT ELEMENTS NOT MAINTAINED					
1977 006A	COSMOS 891	9801	USSR	2 FEB	94.4	65.8	522	464		
1977 006B		9802	USSR	2 FEB	94.3	65.8	522	455		
1977 007A		9803	US	6 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1977 007C		9855	US	6 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1977 007D		9856	US	6 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1977 010A	MOLNIYA 2	9829	USSR	11 FEB	717.7	62.7	39853	498		
1977 010E		9850	USSR	11 FEB	731.0	62.8	40499	508		
1977 011A	COSMOS 893	9833	USSR	15 FEB	105.1	74.0	1675	330		
1977 011B		9834	USSR	15 FEB	104.1	73.9	1580	328		
1977 012A	TANSEI 3	9841	JAPAN	19 FEB	134.1	65.7	3814	796		
1977 012B		9842	JAPAN	19 FEB	95.7	65.4	780	332		
1977 012C		9843	JAPAN	19 FEB	134.2	65.7	3816	794		
1977 012D		9844	JAPAN	19 FEB	95.8	64.9	789	334		
1977 013A	COSMOS 894	9846	USSR	21 FEB	104.9	82.9	1016	969		
1977 013B		9848	USSR	21 FEB	104.8	82.9	1004	972		
1977 014A	KIKU 2	9852	JAPAN	23 FEB	1435.9	0.5	35793	35773		
1977 014B		9859	JAPAN	23 FEB	627.5	23.5	35577	221		
1977 015A	COSMOS 895	9853	USSR	26 FEB	97.1	81.1	635	610		
1977 015B		9854	USSR	26 FEB	97.2	81.1	691	560		
1977 017F		9879	USSR	10 MAR	89.8	72.8	378	162		
1977 018A	PALAPA 2	9862	INDNSA	10 MAR	1451.2	0.1	36250	35915		
1977 018B		9864	US	10 MAR	645.6	24.7	36499	231		
1977 018C		9866	US	10 MAR	115.2	28.6	2741	187		
1977 018D		9867	US	10 MAR	117.2	28.7	2923	186		
1977 018E		9868	US	10 MAR	116.3	28.6	2828	202		
1977 019A		9863	US	13 MAR	89.2	96.3	358	122		
1977 021A	MOLNIYA 1	9880	USSR	24 MAR	717.4	62.9	39879	461		
1977 021D		9927	USSR	24 MAR	732.8	62.9	40624	470		
1977 022A	COSMOS 899	9883	USSR	24 MAR	95.1	74.0	548	502		
1977 022B		9884	USSR	24 MAR	95.0	74.0	545	494		

OBJECTS IN ORBIT

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1977 LAUNCHES (CONT'D)										
1977 022C		9900	USSR	24 MAR	94.7	74.0	544	472		
1977 023A	COSMOS 900	9898	USSR	29 MAR	94.3	82.9	520	457		
1977 023B		9899	USSR	29 MAR	94.2	82.9	518	448		
1977 024A	METEOR	9903	USSR	5 APR	102.4	81.2	897	853		
1977 024B		9904	USSR	5 APR	102.5	81.2	924	840		
1977 024C		9907	USSR	5 APR	102.5	81.2	924	839		
1977 025A	COSMOS 901	9905	USSR	5 APR	95.4	70.9	810	267		
1977 025B		9906	USSR	5 APR	95.1	70.9	781	274		
1977 027A	COSMOS 903	9911	USSR	11 APR	717.7	62.8	39752	602		
1977 027B		9912	USSR	11 APR	91.8	62.8	524	211		
1977 027C		9913	USSR	11 APR	90.1	62.8	399	163		
1977 027D		9921	USSR	11 APR	724.0	62.7	40059	601		
1977 028A	COSMOS 904	9930	USSR	20 APR	89.7	71.3	323	202		
1977 029A	ESA-GEOS	9931	ESA	20 APR	720.1	26.2	38357	2111	137.200.2299.500	5*
1977 029C		9933	US	20 APR	227.3	26.0	11682	238		
1977 030A	COSMOS 905	9937	USSR	26 APR	89.5	67.1	333	169		
1977 030B		9939	USSR	26 APR	88.0	67.1	202	150		
1977 030C		9940	USSR	26 APR	89.6	67.1	336	171		
1977 031A	COSMOS 906	9938	USSR	27 APR	94.4	50.6	515	464		
1977 032A	MOLNIYA 3	9941	USSR	28 APR	736.0	62.8	40816	436		
1977 032B		9942	USSR	28 APR	90.3	62.8	368	210		
1977 032C		9943	USSR	28 APR	90.7	62.8	431	189		

INITIAL ELEMENTS OF OBJECTS WHICH WERE LAUNCHED/CATALOGED AND DECAYED WITHIN THE REPORTING PERIOD

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLINATION	APOGEE KM.	PERIGEE KM.	NOTES
1977 016A	COSMOS 896	9857	USSR	3 MAR	88.6	72.9	205	201	
1977 016B		9858	USSR	3 MAR	88.2	72.9	203	189	
1977 016C		9865	USSR	3 MAR	89.1	72.9	296	166	
1977 016D		9869	USSR	3 MAR	88.9	72.9	293	148	
1977 016E		9870	USSR	3 MAR	88.7	72.9	266	157	
1977 016F		9873	USSR	3 MAR	90.9	72.9	406	234	
1977 016G		9874	USSR	3 MAR	91.1	72.9	427	234	
1977 016H		9875	USSR	3 MAR	92.1	72.9	518	235	
1977 017A	COSMOS 897	9860	USSR	10 MAR	89.6	72.8	341	169	
1977 017B		9861	USSR	10 MAR	89.5	72.8	330	168	
1977 017C		9876	USSR	10 MAR	90.2	72.8	397	168	
1977 017D		9877	USSR	10 MAR	90.0	72.9	378	169	
1977 017E		9873	USSR	10 MAR	90.2	72.8	399	167	
1977 017G		9885	USSR	10 MAR	90.0	72.9	354	192	
1977 020A	COSMOS 898	9871	USSR	17 MAR	88.9	81.4	228	215	
1977 020B		9872	USSR	17 MAR	88.9	81.3	224	214	
1977 020C		9886	USSR	17 MAR	88.6	81.3	207	205	
1977 020D		9887	USSR	17 MAR	88.8	81.3	219	208	
1977 021B		9881	USSR	24 MAR	91.1	62.8	471	190	
1977 021C		9882	USSR	24 MAR	91.0	62.8	443	209	
1977 026A	COSMOS 902	9908	USSR	7 APR	88.8	81.4	266	168	
1977 026B		9909	USSR	7 APR	88.4	81.4	229	162	
1977 026C		9910	USSR	7 APR	88.9	81.4	268	175	
1977 026D		9928	USSR	7 APR	88.3	81.4	221	160	
1977 026E		9929	USSR	7 APR	88.7	81.4	254	168	
1977 028B		9935	USSR	20 APR	89.8	71.4	325	199	
1977 028C		9936	USSR	20 APR	INITIAL ELEMENTS NOT AVAILABLE				
1977 029B		9932	US	20 APR	INITIAL ELEMENTS NOT AVAILABLE				
1977 029D		9934	US	20 APR	88.4	28.7	233	158	

OBJECTS DECAYED WITHIN THE REPORTING PERIOD

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1963 014AF		2499	US	9 MAY	12 APR 77	
1963 014BM		3247	US	9 MAY	4 APR 77	
1963 014BW		3256	US	9 MAY	12 APR 77	
1966 025F		4007	US	30 MAR	12 APR 77	
1966 056J		8075	US	24 JUN	19 FEB 77	
1966 056L		8077	US	24 JUN	1 APR 77	
1966 056M		8078	US	24 JUN	19 FEB 77	
1966 056R		9452	US	24 JUN	8 MAR 77	
1966 056T		9454	US	24 JUN	8 FEB 77	
1966 056U		9455	US	24 JUN	3 MAR 77	
1966 056V		9456	US	24 JUN	14 FEB 77	
1966 056AB		9462	US	24 JUN	9 FEB 77	
1967 108H		6697	USSR	30 OCT	29 MAR 77	
1968 097DR		5890	USSR	1 NOV	1 MAR 77	
1969 045B		5576	US	22 MAY	7 MAR 77	
1969 068B	PAC 1	4066	US	9 AUG	28 APR 77	
1971 115A	MOLNIYA 1	5712	USSR	19 DEC	13 APR 77	
1972 037A	MOLNIYA 2	6031	USSR	19 MAY	22 MAR 77	
1972 058FK		8393	US	23 JUL	16 MAR 77	
1972 058HV		9729	US	23 JUL	21 APR 77	
1974 100C		7582	USSR	18 DEC	6 MAR 77	
1974 101C		7580	US	19 DEC	24 APR 77	
1975 004K		8683	US	22 JAN	5 APR 77	
1975 004DM		9286	US	22 JAN	25 APR 77	
1975 004EZ		9322	US	22 JAN	12 APR 77	
1975 008D		7645	USSR	5 FEB	17 APR 77	
1975 008E		7777	USSR	5 FEB	29 APR 77	
1975 102T		8637	USSR	29 OCT	4 APR 77	
1975 102AF		8651	USSR	29 OCT	16 MAR 77	
1975 102BA		8723	USSR	29 OCT	14 APR 77	
1976 001D		8550	USSR	6 JAN	24 MAR 77	
1976 012B		8659	USSR	5 FEB	24 MAR 77	
1976 012C		8660	USSR	5 FEB	14 APR 77	
1976 044A	COSMOS 818	8851	USSR	18 MAY	7 MAR 77	
1976 111H		9584	USSR	23 NOV	20 MAR 77	
1976 111K		9586	USSR	23 NOV	5 MAR 77	
1976 116B		9575	USSR	2 DEC	4 MAR 77	
1976 127B		9636	USSR	28 DEC	16 MAR 77	
1977 010B		9830	USSR	11 FEB	13 MAR 77	
1977 010C		9831	USSR	11 FEB	2 MAR 77	
1977 016A	COSMOS 896	9857	USSR	3 MAR	16 MAR 77	
1977 016B		9858	USSR	3 MAR	4 MAR 77	
1977 016C		9865	USSR	3 MAR	25 MAR 77	
1977 016D		9869	USSR	3 MAR	17 MAR 77	
1977 016E		9870	USSR	3 MAR	17 MAR 77	
1977 016F		9873	USSR	3 MAR	24 MAR 77	
1977 016G		9874	USSR	3 MAR	23 MAR 77	
1977 016H		9875	USSR	3 MAR	21 MAR 77	
1977 017A	COSMOS 897	9860	USSR	10 MAR	23 MAR 77	
1977 017B		9861	USSR	10 MAR	15 MAR 77	
1977 017C		9876	USSR	10 MAR	31 MAR 77	
1977 017D		9877	USSR	10 MAR	27 MAR 77	
1977 017E		9878	USSR	10 MAR	26 MAR 77	
1977 017G		9885	USSR	10 MAR	27 MAR 77	
1977 020A	COSMOS 898	9871	USSR	17 MAR	30 MAR 77	
1977 020B		9872	USSR	17 MAR	22 MAR 77	

OBJECTS DECAYED WITHIN THE REPORTING PERIOD

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1977 020C		9886	USSR	17 MAR	30 MAR 77	
1977 020D		9887	USSR	17 MAR	3 APR 77	
1977 021B		9881	USSR	24 MAR	19 APR 77	
1977 021C		9882	USSR	24 MAR	12 APR 77	
1977 026A	COSMOS 902	9908	USSR	7 APR	20 APR 77	
1977 026B		9909	USSR	7 APR	9 APR 77	
1977 026C		9910	USSR	7 APR	10 APR 77	
1977 026D		9928	USSR	7 APR	20 APR 77	
1977 026E		9929	USSR	7 APR	23 APR 77	
1977 028B		9935	USSR	20 APR	29 APR 77	
1977 028C		9936	USSR	20 APR	23 APR 77	
1977 029B		9932	US	20 APR	20 APR 77	
1977 029D		9934	US	20 APR	20 APR 77	

FOOTNOTES

1* 252 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1961 OMICRON 1 AND 1961 OMICRON 2. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

2* 98 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1963 014A, 1963 014B, AND 1963 014C. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

3* 13 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1963 047A. THE OBJECT OF THIS SERIES THAT HAS DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

4* 146 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1965 020A, 1965 020B, AND 1965 020C. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

5* TRANSMITTING ON COMMAND ONLY.

6* 464 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1965 082A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

7* DEBRIS DISCOVERED IN ORBIT WHICH HAS NOT BEEN IDENTIFIED WITH ANY LAUNCH OR COUNTRY OF ORIGIN.

8* 77 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1966 056A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

9* 21 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1967 001A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

10* 81 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1968 091A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

11* 114 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1968 097A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

12* 37 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1969 029A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

13* A MANNED SPACECRAFT WHICH SUCCESSFULLY LANDED ON THE MOON AND RETURNED TO SELENOCENTRIC ORBIT.

14* 240 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1969 082A, 1969 082B, 1969 082C, 1969 082D, 1969 082E, 1969 082F, 1969 082G, 1969 082H, 1969 082J, AND 1969 082K. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

15* 323 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1970 025A AND 1970 025B. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

16* 90 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1970 089A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

17* 38 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1970 091A. THE OBJECT OF THIS SERIES THAT HAS DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

18* DEBRIS DISCOVERED IN ORBIT WHICH HAS NOT BEEN IDENTIFIED WITH ANY LAUNCH.

19* 82 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1971 015A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

FOOTNOTES (CON'T)

20* 212 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1972 058A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

21* LUNAR ORBIT. ORBITAL ELEMENTS ARE SELENOCENTRIC PARAMETERS (REFERENCED TO THE EARTH'S EQUATOR).

22* 171 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1973 086A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

23* 118 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1974 089A. 1974 089B, AND 1974 089C.

24* 50 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1974 103A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

25* 193 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1975 004A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

26* 24 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1976 037A.

27* 16 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1976 124A.

28* 38 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1976 126A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

NNA NO CATALOG NUMBER ASSIGNED.